

***Case No COMP/M.5421 -  
PANASONIC/ SANYO***

Only the English text is available and authentic.

**REGULATION (EC) No 139/2004  
MERGER PROCEDURE**

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Article 6(2) NON-OPPOSITION  
Date: 29/09/2009

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EUROPEAN COMMISSION

Brussels, 29/09/2009  
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In the published version of this decision, some information has been omitted pursuant to Article 17(2) of Council Regulation (EC) No 139/2004 concerning non-disclosure of business secrets and other confidential information. The omissions are shown thus [...]. Where possible the information omitted has been replaced by ranges of figures or a general description.

PUBLIC VERSION

MERGER PROCEDURE  
ARTICLE 6(1)(b) DECISION IN  
CONJUNCTION WITH  
ARTICLE 6(2)

**To the notifying party**

Dear Sirs,

**Subject: Case No COMP/M.5421 – PANASONIC/ SANYO  
Notification of 11.08.2009 pursuant to Article 4 of Council Regulation  
No 139/2004<sup>1</sup>**

1. On 11 August 2009, the Commission received notification of a proposed concentration pursuant to Article 4 of Council Regulation (EC) No 139/2004 (“the EC Merger Regulation”) by which the undertaking Panasonic Corporation (“Panasonic”, Japan) acquires within the meaning of Article 3(1)(b) of the EC Merger Regulation control of the whole of the undertaking Sanyo Electric Co., Ltd. (“Sanyo”, Japan) by way of a public bid for all of Sanyo’s issued and outstanding securities.

## **I. THE PARTIES**

2. **Panasonic** is a publicly held corporation headquartered in Japan that is primarily active worldwide in the development, manufacture, and sale of a wide range of audiovisual and communication products, home appliances, electronic components and devices (including batteries), industrial and other products.
3. **Sanyo**, which is also a publicly held corporation headquartered in Japan, is primarily active worldwide in the development, manufacture, and sale of consumer products, commercial equipment, electronic components (including batteries) and industrial logistics/maintenance equipment.

## **II. THE OPERATION**

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<sup>1</sup> OJ L 24, 29.1.2004, p. 1.

4. On 19 December 2008, Sanyo's Board of Directors executed a Capital and Business Alliance Agreement with Panasonic's Board of Directors, pursuant to which Sanyo's Board has agreed to endorse Panasonic's tender offer for all of Sanyo's issued and outstanding common shares provided it is launched by [...].
5. Panasonic intends to bid for all of Sanyo's issued and outstanding shares. Panasonic's intended bid price of ¥131/share is below the current market price. However, Panasonic expects to acquire sole control over Sanyo through its acquisitions from the Control Shareholders<sup>2</sup>, even if no other shareholders tender their shares. [...]. Based on their agreements with Panasonic, the Control Shareholders will tender a total of [...] shares (assuming the conversion of preferred to common shares), representing [>50%] of the voting stock of Sanyo.

### **III. CONCENTRATION**

6. As explained above, Panasonic expects to acquire sole control over Sanyo through its acquisition from the Control Shareholders. The proposed transaction therefore constitutes a concentration within the meaning of Article 3(1)(b) of the EC Merger Regulation.

### **IV. COMMUNITY DIMENSION**

7. The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 5 000 million<sup>3</sup> [Panasonic EUR 50 938 million, Sanyo EUR 13 235 million] Each of them has a Community-wide turnover in excess of EUR 250 million [Panasonic EUR [...] million, Sanyo EUR [...] million] and they do not achieve more than two-thirds of their aggregate Community-wide turnover within one and the same Member State. The notified operation therefore has a Community dimension pursuant to Article 1(2) of the EC Merger Regulation.

### **V. COMPETITIVE ASSESSMENT**

#### *Preliminary remarks*

8. The proposed transaction would result in affected markets for a number of portable batteries (described more fully below) as well as batteries for hybrid electric vehicles ('HEVs'). The proposed transaction would also result in affected markets for certain consumer goods based on a national geographic market definition<sup>4</sup>.

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<sup>2</sup> Ocean Holdings Co, Ltd, an affiliate of Goldman Sachs Group, Inc ("Goldman Sachs"); Evolution Investments Co, Ltd, a wholly-owned subsidiary of Daiwa Securities SMBC Principal Investments Co, Ltd ("Daiwa PI"); and Sumitomo Mitsui Banking Corp ("SMBC") (collectively the "Control Shareholders").

<sup>3</sup> Turnover calculated in accordance with Article 5(1) of the EC Merger Regulation and the Commission Consolidated Jurisdictional Notice (OJ C95, 16.4.2008, p. 1).

<sup>4</sup> These products are: digital still cameras, voice recorders, DVD player-recorders, home audio systems, flat-panel televisions, digital projectors, microwave ovens, air conditioners and camcorders. On the basis of GfK panel data, the market for camcorders would also be an affected market on an EEA basis (>15%) but this would not be the case according to the Parties' own estimates ([<15%]). The Parties also account for more than 15% of sales to third Parties on a worldwide basis of certain components, namely tuners

9. The present decision is structured in the following way. It first discusses the relevant markets for batteries and undertakes the competitive assessment for each affected market. Second, the decision examines a number of consumer goods markets that are potentially affected by the proposed transaction.

#### **A. Batteries – General introduction**

10. Batteries are devices that produce electrical energy by means of a chemical interaction between a negative electrode (“anode”) and a positive electrode (“cathode”) through a conductive material (“electrolyte”). The resulting electricity may be tapped from the cell and used to power a wide range of devices. A “battery” is technically defined as an assembly of at least two cells, which may be arranged in series (in order to increase voltage), in parallel (in order to increase capacity), or both (in order to increase voltage and capacity). However, even single cells are now commonly referred to as “batteries”<sup>5</sup>.
11. A fundamental distinction may be drawn between “primary” (more popularly known as “disposable”) batteries and “secondary” (hereafter “rechargeable”) batteries. Primary batteries hold more energy by size/weight (i.e. have a higher “energy density”) than rechargeable batteries, but may be used after purchase only until their chemical charge is depleted before being discarded. They cannot be reliably recharged because the chemical reactions that take place in the cell are not easily reversible and active materials may not return to their original form. Rechargeable batteries typically have a lower energy density than primary cells but can be recharged (i.e. the chemical reactions in the battery can be reversed by supplying electrical energy to the cell such that power can be drawn from the battery over multiple cycles).
12. The term “portable” battery denotes sealed power cells that can be hand-carried and are meant for use in relatively small devices like mobile telephones, laptop computers, power tools, toys, and the like. This differentiates them from “heavy duty industrial” batteries (stationary power supplies that are used in businesses, factories and the like) and “automotive” batteries (which are used in cars, trucks, and other wheeled vehicles)<sup>6</sup>.

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and optical pick ups (“OPUs”). Neither party to the transaction sells OPUs in the EEA. Sanyo does not sell tuners in the EEA. OPUs and tuners are therefore not considered further in this decision.

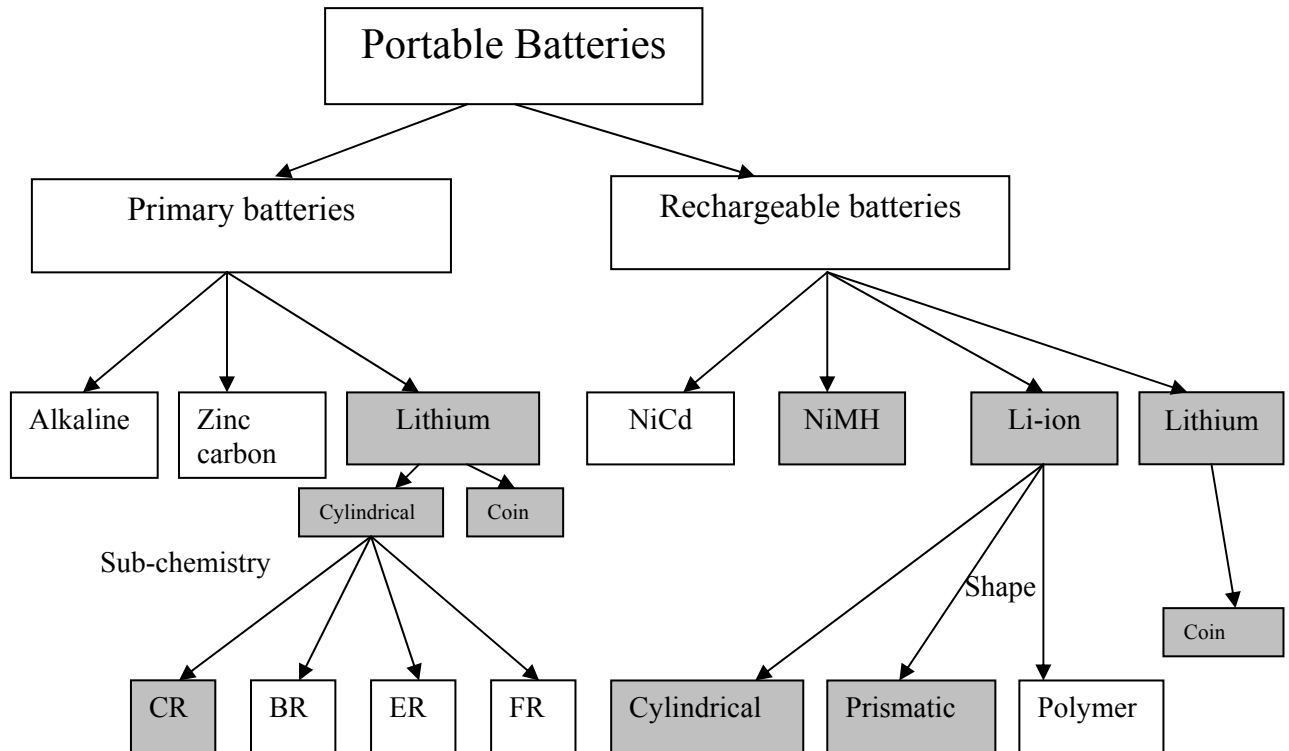
<sup>5</sup> Battery performance (i.e. a battery’s output) can be measured by both voltage and capacity. Voltage (“V”) is essentially electromotive force, and is equal to the difference of electrical potential between two points of a circuit carrying a constant current of one ampere. “Capacity” designates the nominal amount of energy that a battery can deliver over a period of time without overheating, and is commonly measured by reference to the amount of electricity transferred by a current of one ampere in one hour (“Ah”). In portable batteries, capacity is typically measured by “milliampere-hour” (“mAh”), which is 1/1000 of an ampere hour.

Because the physical size of a battery determines how much anode material it can contain, and the anode is consumed in the chemical reaction that produces electric current, a large (e.g. D-size) battery has greater capacity than a smaller (e.g. AAA-size) one. However, each type of chemistry used in portable batteries (e.g. zinc-carbon, alkaline, nickel cadmium (“NiCd”), nickel-metal hydride (“NiMH”), lithium, and lithium-ion (“Li-ion”)) has a single nominal voltage, which does not vary with battery size.

<sup>6</sup> Directive 2006/66/EC of the European Parliament and the Council on batteries and accumulators and waste batteries and accumulators, OJ [2006] L 266/1, *as corrected*, OJ [2006] L 311/58, *and amended*, OJ

## B. Portable Batteries

13. The Commission has considered portable batteries in previous decisions but the precise scope of the relevant product market has been left open<sup>7</sup>.
14. Portable batteries can be primary or rechargeable and be based on different chemistries as shown in the diagram below. In the present case, the overlaps between the merging Parties' activities in portable batteries are in primary cylindrical lithium batteries ("CLBs"), primary coin-shaped batteries, rechargeable nickel-metal hydride batteries ("NiMH"), rechargeable Lithium-ion batteries ("Li-ion") batteries as well as rechargeable coin-shaped batteries. Affected markets are shaded in the diagram below.



### 1. PRIMARY PORTABLE BATTERIES

15. Primary portable batteries can be divided into the following chemistries (chemistries in the battery anode):
1. Alkaline
  2. Zinc carbon

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[2008] L 76/39) states that the term “Portable Battery or accumulator” means any battery . . . that (a) is sealed (b) can be hand carried and (c) is neither an industrial battery . . . nor an automotive battery”. While the Commission has sometimes referred to portable batteries as “consumer” batteries (e.g. Case No COMP/M.2705 – *Energys/Invensys* (4/3/2002)), the term “portable” would appear to be preferable because such batteries are used not only in consumer devices but also in e.g. electronic price/security tags, utility meters, and other small business devices.

<sup>7</sup> See Case No COMP/M.2386 – *MEI Philips* decision of 29 May 2001 and Case No IV/M.836 – *Gillette/Duracell* decision of 8 November 1996.

3. Lithium batteries (Cylindrical Lithium Batteries – "CLBs"– and coin-shaped batteries.)
16. The Parties' activities overlap only in lithium batteries. Lithium batteries can be produced in cylindrical and coin shapes, with primary coin-shaped batteries treated separately under section 1.2.
17. Thus, under section 1.1, lithium batteries refer to cylindrical shape batteries. CLBs are distinguished from other primary portable batteries by their high energy density and long shelf life. These technical characteristics make CLBs particularly well suited for applications that require strong bursts of power and where the battery is used for long periods without replacement (e.g. alarms, utility meters).

## **1.1 PRIMARY CYLINDRICAL LITHIUM BATTERIES**

### *Relevant product market*

#### *(i) Sub-chemistries*

18. The CLB market can be further segmented based on battery sub-chemistries as follows:
  - Lithium manganese dioxide "LiMnO<sub>2</sub>" (hereafter '**CR**' batteries)
  - Lithium poly-carbon monofluoride "Li(CF)<sub>n</sub>" (hereafter '**BR**' batteries)
  - Lithium thionyl chloride "LiSOCl<sub>2</sub>" (hereafter '**ER**' batteries)
  - Lithium-Iron Disulfide "LiFeS<sub>2</sub>" (hereafter '**FR**' batteries).
19. The overlap between the Parties' activities is limited to CR batteries which represent the majority of sales. Panasonic produces both CR and BR batteries while Sanyo is only active in CR batteries.
20. The Parties submit that CLBs constitute a single product market and that there is no need to further segment the market by sub-chemistries. Although each sub-chemistry has its own distinct features, according to the Parties, customers (mainly device manufacturers) take these differences into consideration when designing the device and hence are able to substitute the different sub-chemistries for the "same" device.
21. The result of the market investigation did not confirm the submission of the Parties as to a single product market for the different sub-chemistries of CLBs. On the contrary, as explained below, it generally indicates that the different sub-chemistries within CLBs constitute separate product markets, although there may exist some demand-side substitution between CR and BR chemistries.

### *Supply substitutability between the different sub-chemistries*

22. From the supply side, the market investigation showed that the different sub-chemistries within CLBs are not substitutable. The market investigation revealed that a separate production line is needed for each sub-chemistry to avoid contamination (impurities) between the batteries. Accordingly, switching from one chemistry to the other seems to be very time consuming and requires significant investment which would not be undertaken by most of the producers in case of a price increase of 5-10%.

The respondents to the market investigation also indicate that a specific know-how is required with respect to each sub-chemistry, which further limits the possibility of starting the production of a new sub-chemistry of CLBs.

*Demand substitutability between CR and FR batteries*

23. The market investigation revealed that FR batteries do not compete with CR batteries or other sub-chemistries for most, if not all of the industrial end-applications. The main industrial applications of CR batteries are currently film cameras, smoke detectors, utility meters, burglar/car alarms and electronic toll collection ('ETC') devices.
24. FR batteries do not compete for these end-applications as currently they are only sold for military applications and for retail/end customers. The technical and performance characteristics of FR batteries are very different from batteries sold for industrial applications such as CR, ER and BR batteries<sup>8</sup>. While the Parties themselves acknowledge that FR batteries do not compete for industrial applications with CR batteries, they argue that in the near future they will capture a significant share of industrial sales. This has not been confirmed by the result of the Commission's market investigation. None of the customers who currently use CR batteries indicate that they would consider switching to FR batteries, should the price of CR batteries increase.
25. In light of the above, the Commission consider that FR batteries do not belong to the same product market as CR batteries.

*Demand substitutability between CR and ER batteries*

26. In line with the Parties' submission, the market investigation indicates that CR and ER batteries are used, to a large extent<sup>9</sup>, for different end-applications given their different technical characteristics (voltage, pulse capability, lifetime, temperature range, etc).
27. Given these different technical and performance characteristics, most of the customers do not regard them as substitutable for their end-applications/devices and thus are not willing to switch from CR to ER batteries should the price of the former increase.
28. Moreover, given that ER batteries contain highly toxic material and are normally more expensive, customers are reluctant to switch from CR to ER batteries. Respondents indicate that there is a trend for certain end-applications such as utility meters and ETC-systems which are currently dominated by ER batteries to switch from ER to CR batteries. This results also from the fact that new applications can function with the lower voltage provided by CR batteries.
29. Based on the above, the Commission considers that CR and ER batteries do not belong to the same product market.

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<sup>8</sup> FR batteries have a voltage of 1.5V whereas industrial type batteries have a voltage of 3V (CR and BR) and 3.6V(ER). Also, FR batteries have lower pulse capability (which refers to the cell's ability to deliver strong power surges), lifetime and the temperature range within which the cell can be used.

<sup>9</sup> The use of CR and ER batteries overlaps to a very limited extent with regard to some (but not all) end-applications. However, the respective share of CR and ER batteries for these end-applications seems to be rather constant over the last three years.

*Demand substitutability between CR and BR batteries*

30. As to the substitution between CR and BR chemistries, the result of the market investigation was not entirely conclusive. Although CR and BR batteries differ in certain performance characteristics (e.g. pulse capability, lifetime), a certain number of customers indicated that they would be willing to switch from CR to BR batteries in case of a significant price increase for the former. This might be explained by the fact that both CR and BR have the same voltage of 3V, making the switch between the two sub-chemistries easier.
31. Some customers explain however that even if CR and BR batteries are technically close to each other compared to other sub-chemistries, switching from one to another is difficult given the testing period and costly process that such a switch would require on the part of device manufacturers. This would also be consistent with the pricing analysis that was performed by the Commission on Panasonic's customer-level transaction data (as Panasonic produces both BR and CR chemistry) that suggests that it is not likely these two chemistries are in the same market, as the correlations of Panasonic's BR and CR average prices are very low (below [...]).<sup>10</sup>
32. In any event, the question whether CR and BR batteries belong to the same product market can be left open as competition concerns arise under both possible market definitions because (as will be seen below) Panasonic is a monopolist producer of the BR chemistry, and thus the inclusion of the BR chemistry would only increase the merged entity's market share.

*(ii) Industrial batteries – consumer batteries*

33. The Parties submit that a distinction should be made between two channels of trade, an industrial channel and a consumer channel. This is only relevant for CR batteries since BR and ER batteries are only sold to industrial customers. The industrial channel would consist of sales to device manufactures and pack makers<sup>11</sup> (including private label suppliers) while the consumer channel according to the Parties consists of direct sales to wholesalers and retailers.
34. This distinction is according to the Parties supported by several factors. First, the batteries that are sold to these two channels are different, as the batteries for the industrial channel are enhanced so they are more reliable and have longer shelf life. Second, the batteries for the customer channel are standardized as opposed to the industrial channel, where the customers can have the products tailored to their own specifications. Third, consumer branding is significantly more important at the consumer level as opposed to the industrial level. Fourth, the contractual terms for the customers in these two channels are also different. Fifth, the price levels in these two channels are different.

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<sup>10</sup> The correlation analysis was performed separately for the EEA and Asia to ensure that the results are not driven by any other different conditions in the two geographies.

<sup>11</sup> Pack makers assemble cells into custom made battery packs. They operate either on behalf of the cell manufacturer, in cases where the latter outsources the pack making, or as an independent supplier.



35. The result of the market investigation confirmed differences between the consumer and industrial battery markets although it is not entirely clear whether the distinction should be made based on the physical characteristics of the battery or based on the channels of trade as the Parties submit. However, this question can be left open as the present transaction does not give rise to an affected market for consumer batteries either defined as a channel of trade or based on the characteristics of the batteries<sup>12</sup>. Thus, the CLB consumer battery market is not further addressed in the present Decision.

#### *Relevant geographic market*

36. The Parties submit that the relevant market for CLBs is the EEA, given the greater acceptance of ER batteries, (the sub-chemistry produced by the European battery manufacturer Saft) in the EEA than in the rest of the world.

37. As explained above, however, ER batteries do not belong to the same product market as CR batteries. Therefore, the Parties' argument for an EEA wide market based on specification of ER batteries is not appropriate.

38. The result of the market investigation as to the exact scope of the geographic market for CR and BR batteries was not conclusive. The following elements point toward a worldwide market: (i) CR and BR batteries are produced outside the EEA, mainly in Asia (ii) there are no major differences in customers' requirements between the EEA, USA and Asia (iii) producers would have a global pricing strategy and (iv) many customers source globally. There are however also indications for an EEA market. Some customers indicate that significant price differences exist between the EEA and the rest of the world, pointing to an EEA-wide market. Furthermore, the Commission's pricing analysis suggests that Panasonic's pricing behaviour across the different continents is not consistent with a world-wide market definition, as correlations of Panasonic's average CR prices in the EEA, North America and Asia are very low (below [...])<sup>13</sup>.

39. In any event, the exact geographic market definition can be left open in the present case as serious doubts have been identified irrespective of the precise geographic market definition.

#### *Competitive assessment*

40. The Parties' activities overlap only with regard to CR batteries.

41. The market for CR batteries amounts to EUR [...] million in the EEA and approximately EUR [...] million worldwide<sup>14</sup>.

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<sup>12</sup> The Parties' share of sales in the consumer channel for CLBs is very small. Based on the AC Nielsen report, Panasonic brand batteries accounted for only [0-5%] and Sanyo's brand battery for less than [0-5%].

<sup>13</sup> As Sanyo sells most of its CR batteries in Asia, it was not possible to perform such pricing tests for Sanyo.

<sup>14</sup> The market for BR batteries is rather small compared to CR, amounting to EUR [...] million in the EEA and approximately to EUR [...] million worldwide.

42. The market shares of the Parties for CR batteries (in value) are the following:

<b>CR batteries</b>	<b>Global</b>	<b>EEA</b>
Panasonic	[30-40]	[20-30]
Sanyo	[20-30]	[30-40]
<b>Combined</b>	<b>[60-70]</b>	<b>[50-60]</b>
Ultralife	[10-20]	[5-10]
P&G	[5-10]	[5-10]
FDK	[0-5]	[0-5]
Maxell	[0-5]	[0-5]

43. Post transaction, the Parties will have a very high combined market share for CR batteries, several times higher than their next competitors. If a wider market for CR and BR were to be considered, the Parties' combined market shares would be even higher considering that Panasonic is the only producer of BR batteries having 100% of these sales. However, given that the BR market is rather small in value compared to the CR market, the Parties' combined market share would not change significantly considering a potential market for CR and BR batteries<sup>15</sup>.
44. Most of the Parties' competitors and customers consider Panasonic and Sanyo as each other's closest competitors in the market for CR batteries. The Parties are perceived by market players as the most reliable suppliers providing the highest quality battery. Also, both Parties produce CR batteries with spiral structure which is particularly well suited to certain applications. The closeness of competition is also confirmed by comparing Panasonic's and Sanyo's prices in Asia (the only continent with large enough sales for such a comparison to be meaningful), as both of these price series are moving closely together over time.
45. Contrary to the Parties' claim that demand for CR batteries is declining, a large number of customers and competitors indicate that the market for CR batteries is growing. This is mainly due to development of some (new) industrial applications for CR batteries and to the shift from ER to CR batteries for certain end-applications such as ETC, utility meters, currently dominated by ER batteries. Also, the research and development devoted by the Parties to CR batteries (as a percentage of sales) is very high compared to other batteries. [Confidential information about Sanyo's future plans].
46. The Parties submit that numerous Chinese producers are entering the market for CR batteries and that entry is relatively easy. The market investigation reveals however

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<sup>15</sup> The market share of the Parties for a potential market including both CR and BR batteries (in value) would be even higher considering that Panasonic is the only producer of BR batteries. The combined market share of the Parties would amount to [60-70%] in the EEA and to [60-70%] Worldwide.

that most of the producers recently entering the market for CR batteries do not meet the same quality and safety standards as the Parties.

47. Several market players have raised concerns with regard to the transaction for CR batteries given the very high market share of the Parties. They indicate that competition for CR batteries will be reduced leading to higher prices and reducing the Parties' incentive to innovate.

#### *Conclusion*

48. In light of the above described elements, the Commission considers that the proposed transaction raises serious doubts as to its compatibility with the common market in primary cylindrical lithium batteries irrespective of the product and geographic market definitions. The Parties submitted commitments to address the serious doubts identified in this market (see Chapter VI of the present decision).

## **1.2 PRIMARY COIN-SHAPED BATTERIES**

### *Relevant product market*

49. Coin-shaped batteries are round miniature cells whose diameter exceeds their height. This shape makes them uniquely suitable for use in small devices and as short term back up when the main battery for a device fails.
50. Coin-shaped batteries are manufactured both in primary (disposable) and rechargeable variants. The Parties submit that primary and rechargeable coin batteries do not belong to the same product market given their very different technical characteristics and price. An analysis for rechargeable coin batteries follows in the rechargeable batteries section (see section 2.3).
51. Primary coin-shaped batteries make up the majority of sales of coin-shaped batteries and are usually used in watches, calculators, hearing aids, cameras and utility meters. In primary coin-shaped batteries using lithium as their anode<sup>16</sup>, similarly to CLBs, a distinction can be made between CR and BR sub-chemistries (ER and FR sub-chemistries are not commercialised). Market participants have indicated that each sub-chemistry has different technical characteristics. However, the proposed transaction would not lead to competition concerns irrespective of any further segmentation based on sub-chemistry.

### *Relevant geographic market*

52. The Parties argue that the market is worldwide in scope since coin-shaped batteries are mainly produced in Asia, are traded globally and prices do not vary meaningfully by region. Respondents in the market investigation have indicated that the scope of the market is likely to be worldwide. However, since the precise scope of the geographic

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<sup>16</sup> The market investigation has indicated that other types of primary coin exist based on alkaline, silver oxide and zinc air chemistries. These primary coins, however, operate at lower voltages (approximately 1.5V). Since Sanyo is not active in the manufacture or sale of such batteries there is no overlap in these battery types between the merging Parties.

market does not materially affect the competitive assessment, the geographic market can be left open in the present case.

### *Competitive assessment*

53. Panasonic is the market leader in both the EEA and worldwide market for CR and BR sub-chemistries (being dominant in the latter category). Sanyo, however, does not manufacture primary coin-shaped batteries and only resells minor quantities of CR batteries to the merchant market. Therefore, the proposed transaction would not give rise to any overlap in the BR sub-chemistry. In CR, the increment arising from the proposed transaction is limited at no more than [0-5%].<sup>17</sup> In addition, a number of strong alternative suppliers exist including Maxell, Sony and LiSun.
54. The market investigation confirmed that there are no competition concerns in the market for primary coin-shaped batteries. A number of respondents underlined that as it does not produce primary coin-shaped batteries, Sanyo, does not have a credible competitive position on the market. The Commission therefore concludes that the proposed transaction does not raise serious doubts in primary coin-shaped batteries.

## **2. RECHARGEABLE PORTABLE BATTERIES**

### *Introduction*

55. Compared to primary batteries, rechargeable batteries are significantly more expensive and need different production facilities and know-how to produce. Rechargeable batteries are sold to a wide extent to OEMs to be included in industrial or consumer devices. Portable NiMH batteries are also sold to the end-consumer market as a replacement for primary batteries, in particular replacing zinc-carbon and alkaline batteries.

### *Relevant Product Market*

#### *Segmentation by chemistry*

56. Portable rechargeable batteries come mainly in three principle different chemistries, nickel-cadmium ("NiCd")<sup>18</sup>, nickel-metal hydride ("NiMH")<sup>19</sup> and Lithium-ion ("Li-ion")<sup>20</sup>, which all have different physical and performance characteristics.

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<sup>17</sup> It is noted that in a market comprising both BR and CR sub-chemistries, the increment arising from the proposed transaction would also be relatively limited at approximately [0-5%].

<sup>18</sup> NiCd batteries typically use nickel hydroxide as the cathode, metallic cadmium as the anode, and an alkaline electrolyte (typically potassium hydroxide).

<sup>19</sup> NiMH batteries use nickel hydroxide as the cathode, an alkaline electrolyte (typically potassium hydroxide) and a hydrogen-absorbing alloy as the anode instead of cadmium as in NiCd batteries.

<sup>20</sup> Li-ion batteries may be made with various sub-chemistries (as later discussed). The most popular material for the anode is graphite, while the cathode is generally a layered oxide (e.g. lithium cobalt oxide), polyanion (e.g. lithium iron phosphate), or spinel (e.g. lithium manganese oxide). An organic solvent containing lithium salts is used as the electrolyte.

57. NiCd batteries were the first rechargeable batteries to be commercialized. However, due to their very toxic ingredient cadmium, the European Community largely banned their use in 2006.<sup>21</sup> NiCd may continue to be used in the Community only for medical use, alarm systems, emergency lighting and portable power tools.<sup>22</sup> Given recent Community legislation that severely restricts the use of NiCd batteries in the Community and therefore also the capability of NiCd batteries to constrain the pricing of other rechargeable batteries sold in the Community, the Parties submit that NiCd batteries should not be part of the relevant product market. This was also confirmed by the market investigation. As Panasonic is no longer active in NiCd batteries, there is no overlap in this market.
58. Compared to NiCd batteries, NiMH rechargeable batteries are less toxic, have roughly double the capacity, a better power-to-weight ratio and less "memory" effect.<sup>23</sup> However, 3V NiMH cells can be up to 10-20% more expensive than NiCd batteries, and have a lower recharge/discharge rate (producing somewhat lesser power surges than NiCd).
59. Unlike NiCd and NiMH cells, Li-ion rechargeable batteries are 3.6V cells that are made in several different shapes (cylindrical, prismatic and polymer). According to the Parties, Li-ion offers the best energy-to-weight ratio of the other battery types and, because of its higher voltage, can power a device with fewer cells than NiMH or NiCd. Li-ion cells also have relatively low self-discharge rate<sup>24</sup> and unlike nickel-based batteries, do not suffer from any "memory effect". On the downside, Li-ion batteries are more expensive than NiMH batteries, and their ability to produce power surges required by some devices is lower compared to NiMH batteries. Li-ion batteries are sold primarily to device manufacturer and pack makers<sup>25</sup> and not directly to the end-consumer.
60. The Parties submit that NiMH and Li-ion cells form part of one single market. They explain that both battery chemistries are functionally and economically substitutable to an appreciable extent. In addition, NiMH and Li-ion batteries are in the Parties' opinion part of a developmental continuum. Finally, the Parties argue that NiMH batteries will be replaced by Li-ion batteries in the near future in virtually all applications.

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21 See Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment, 2002/95/EC and Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC.

22 The continued use of NiCd in cordless power tools is to be reviewed in 2010.

23 "Memory effect" refers to the effect that the recharging of a battery that is not fully discharged can lead to a gradual loss of battery capacity.

24 "Self-discharge rate" refers to the rate at which a cell's electrochemical charge is depleted when the cell is not in use.

25 Pack makers assemble cells into custom made battery packs. They operate either on behalf of the cell manufacturer, in cases where the latter outsources the pack making, or as an independent supplier.

61. The market investigation does not support the Parties' submission. It has shown that both battery types belong to distinct product markets. The production facilities for NiMH batteries and Li-Ion batteries are completely different so that there is no supply-side substitutability. As the Parties themselves point out, each of these batteries chemistries gives the respective rechargeable battery distinctive physical and performance characteristics. These characteristics also necessitate a different product design for the end-application so that during the life time of a certain model, the two types of batteries are not substitutable. However, even in the case of new models, most market participants have indicated that they would not switch chemistry in response to a permanent price increase of 5-10%.
62. Although NiMH batteries are being replaced by Li-ion in some applications, the majority of the market participants which are currently using NiMH batteries have indicated that the use of NiMH batteries will persist for certain applications in the future due to price, safety and reliability considerations. Some market participants have also indicated that the legislative driven switch away from NiCd batteries has or will make them switch (partly) to NiMH batteries for these end-applications.
63. The Commission has obtained pricing data from the Parties to further investigate if the different battery types are part of the same market<sup>26</sup>. The results from the analysis suggest that price correlations are not of the order that NiMH batteries can be considered as part of a wider market that includes Li-ion batteries, and the results from the analysis of relative prices (i.e. stationarity analysis) also suggests that there is no long-run relationship between the prices of batteries of different types. Thus, the pricing analysis points towards a separate market for NiMH batteries and a separate market for Li-ion batteries.

## **2.1 PORTABLE RECHARGEABLE NiMH BATTERIES**

### *Product market*

64. NiMH batteries are used in a wide range of products like power tools, personal care products (shaver, toothbrush, epilator etc.), toys, portable scanners and two-way radios. Furthermore, NiMH batteries are also sold to end-consumers as a replacement for primary (e.g.) alkaline batteries.
65. As mentioned in the discussion on CLBs, the Parties submit that a distinction should be made between two channels of trade, an industrial channel and a consumer channel.
66. The result of the market investigation confirmed differences between the consumer and industrial batteries in respect of the competitive environment, the role of brands and strong preference for certain battery sizes. As the proposed transaction does not give

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<sup>26</sup> The Commission also obtained monthly customer-specific transaction data from both Panasonic and Sanyo on all their (revenue and volume) sales of NiMH and Li-ion batteries world-wide to investigate whether NiMH and Li-ion batteries are part of the same product market. This data was aggregated to regional (i.e. the US, the EEA and Asia) levels, and pricing analysis was undertaken using both correlation and stationarity analyses.

rise to an affected market for consumer NiMH batteries<sup>27</sup>, consumer batteries are not further addressed in the present decision.

*Geographic market*

67. According to the Parties, the market(s) for all rechargeable batteries is world-wide in scope as these batteries are produced mainly in Asia, customers have recourse to a global battery supply base and prices and conditions do not vary meaningfully by region.
68. The responses in the market investigation generally support the Parties' submission that customers source NiMH batteries on a world-wide scale while the packaging is done partially in the EEA. Some market respondents have however indicated that there are significant price differences between China and the rest of the world, as batteries sold in China are of lower quality. Moreover, as it is shown in the below market share table, there appears to be a large deviation in market shares between the EEA and the rest of the world, which is also not consistent with world-wide markets. For example, Panasonic has [10-20%] globally but [30-40%] in the EEA, while both GS Yuasa and GP have more than [20-30%] in the world-wide market but only [5-10%] in the EEA. The pricing analysis also suggests that markets may be EEA-wide, as the EEA prices of batteries do not move closely with prices in Asia and North America although in this respect it should also be noted that a number of important customers located in the EEA indicated that there are no significant price differences between the EEA and other regions of the world.
69. For the purposes of the present decision, however, the geographic market definition can in any case be left open as competition concerns arise irrespective of whether the geographic market is world-wide or EEA-wide.

*Competitive Assessment*

70. In a market for NiMH batteries, Sanyo is currently the market leader with a strong position in particular in the EEA. These market shares would increase through the proposed transaction significantly. The other three competitors are two Chinese and one Japanese company all of which produce their batteries in China.

<b>NiMH</b>	<b>Global</b>	<b>EEA</b>
Panasonic	[10-20%]	[30-40%]
Sanyo	[30-40%]	[40-50%]
<b>Combined</b>	<b>[40-50%]</b>	<b>[70-80%]</b>
GS Yuasa	[20-30%]	[5-10%]
GP	[20-30%]	[5-10%]

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<sup>27</sup> The Parties' share of sales in the consumer channel for portable NiMH batteries is very small. Based on the AC Nielsen report and best estimates of the Parties, Panasonic brand NiMH batteries accounted for only [0-5%] and Sanyo's brand battery for less than [0-5%].

BYD	[5-10%]	[5-10%]
Others	[0-5%]	[0-5%]

Parties' best estimates of sales in value for 2008

71. The proposed transaction would lead to a reduction from five to four market players, with the merged entity being almost [...] as large as its next closest competitor in the global market, and more than [...] times as large as its next closest competitor in the EEA. The merged entity would thus gain high market shares both in view of a world-wide market but in particular considering an EEA market where the merged entity would control [70-80%] of the market. The increment is significant irrespective of the geographic market definition.
72. The market investigation indicates that the Parties are competing notably for high quality industrial applications. The majority of respondents see GS Yuasa, GP and BYD as being positioned more in the mid or low level range while Panasonic and Sanyo's competitive positioning is at the high end of the market. Panasonic and Sanyo produce all sizes of batteries including sub C and D which are used predominantly for certain industrial applications.<sup>28</sup> Panasonic and Sanyo are seen as each other's closest competitor<sup>29</sup>. Both Panasonic and Sanyo are seen by most respondents as the most reliable and quality oriented NiMH battery manufacturer<sup>30</sup>.
73. In addition to the response to the market investigation, the Commission also received tender data that points to the conclusion that the Parties are each others' closest competitors<sup>31</sup>. For example, in the EEA, Panasonic's tendering database suggests that [...] <sup>32</sup>. Similarly, when examining Sanyo's database, [...] <sup>33</sup>. In addition, the Commission also plotted the average NiMH prices of Panasonic and Sanyo in the EEA against each other, and the resulting correlations further suggest that Panasonic and Sanyo are close competitors<sup>34</sup>.

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<sup>28</sup> Sub C is the size currently preferred by power tool customers while D size is used in electric bikes, camcorder, toys and medical devices. At least one other major competitor (GS Yuasa) is not producing sub C and D at all. See replies to question 13 of the questionnaire to portable rechargeable battery competitors from 14.8.2009.

<sup>29</sup> See replies to questions 42-45 of the questionnaire to portable rechargeable battery customers from 14.8.2009.

<sup>30</sup> See replies to question 45 of the questionnaire to portable rechargeable battery customers from 14.8.2009.

<sup>31</sup> In particular, the Commission obtained tendering databases from both of the merging Parties that included information on the identity of competitors that the merging Parties were facing in the last 3 years.

<sup>32</sup> Panasonic's tendering database only contained tenders in the EEA.

<sup>33</sup> Sanyo's database appears to be incomplete. However, the fact that [...] appears to be quite indicative of the relationship between Panasonic and Sanyo.

<sup>34</sup> As Panasonic's transaction database outside of the EEA was quite incomplete, this analysis was only possible for the EEA and not the other regions.



74. The respondents to the market investigation are not expecting new competitors to enter the market for rechargeable NiMH batteries due to the high capital costs for new production facilities and the stable market demand for NiMH batteries<sup>35</sup>.
75. A majority of OEMs using NiMH batteries were critical about the proposed transaction and assume that it would lead to less choice and higher prices<sup>36</sup>. Some major OEMs regard the Parties as the only reliable suppliers of high-quality portable NiMH batteries for certain end applications including power tools. For a number of customers, the merging Parties are the only approved suppliers and they consider that there are significant obstacles that would prevent them from switching from one supplier to another.<sup>37</sup>

### *Conclusion*

76. In light of the above, competition concerns have been identified for the market of portable NiMH batteries irrespective of the precise geographic market definition. Therefore, the proposed transaction raises serious doubts as to its compatibility with the common market and the functioning of the EEA Agreement. The Parties submitted commitments to address the competition concerns identified with regard to the portable NiMH market (see Chapter VI of the present decision).

## **2.2 PORTABLE RECHARGEABLE LI-ION BATTERIES**

### *Product market*

77. As mentioned above, Li-ion battery cells come in different formats: cylindrical, prismatic and polymer. Therefore, a further sub-segmentation of a Li-ion battery market has to be considered. The Parties' activities only overlap in the potential markets for cylindrical and prismatic Li-ion cells.
78. Prismatic cells have the shape of a small rectangle. These are favoured by some OEMs because they have a thinner geometry that enables the manufacturers to optimize space utilization inside their devices and to make correspondingly smaller devices (e.g. cell phones). The principal drawbacks, according to the Parties, are that they cost more to manufacture, have somewhat lower energy density and have lesser mechanical stability than cylindrical cells.
79. Polymerized cells represent the most recent development. Although they share the same drawbacks as prismatic cells, they have an advantage in that the cell can be shaped in a variety of forms that optimize its fit inside a device.
80. According to the Parties, no clear distinction can be drawn between the different Li-ion battery configurations as customers would typically trade off a range of cost and performance considerations when designing their devices and have moved rapidly

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<sup>35</sup> See replies to questions 32, 40 and 42 of the questionnaire to portable rechargeable battery customers from 14.8.2009.

<sup>36</sup> See replies to question 48 the questionnaire to portable rechargeable battery customers from 14.8.2009.

<sup>37</sup> See replies to questions 26 and 30 of the questionnaire to portable rechargeable battery customers from 14.8.2009.

between different configurations. The market investigation does not confirm the Parties' assumption. A switch during the life-time of the model is not possible as a switch would require at least a redesign of the product. Respondents indicated that for some end-applications there is only one suitable configuration. Most market participants have also indicated that they would not switch to a different configuration if there is a significant permanent price increase in one configuration while prices for other configuration remain constant<sup>38</sup>. This finding was also further confirmed by the Commission's pricing analysis that suggests that indeed prices of cylindrical and prismatic batteries move quite differently from each other, which is not consistent with the two battery types being in the same market.

81. As to supply-side substitution, the Parties admit that each configuration of Li-ion cell is sufficiently different from each other, in dimensions and means of assembly, that switching from one type to another, on a single production line, is not straightforward.
82. Therefore, the market investigation indicates that the market for portable Li-Ion can be sub-divided into three separate product markets, i.e. cylindrical Li-ion batteries, prismatic Li-ion batteries and polymer Li-ion batteries. Ultimately the question of exact market definition can in this case be left open, as irrespective of the precise market delineation, the proposed transaction does not raise competition concerns in these markets.

#### *Geographic market*

83. According to the Parties, the market(s) for all rechargeable batteries including Li-ion batteries is world-wide in scope as these batteries are produced mainly in Asia, customers have recourse to a global battery supply base and prices and conditions do not vary meaningfully by region.
84. The first phase market investigation was not completely conclusive on the geographic market for Li-ion batteries, i.e. if it would be EEA-wide or as the Parties assume world-wide. The geographic market definition can however be left open as the proposed transaction does not raise competition concerns for the market of Li-ion batteries irrespective of a further sub segmentation into the different shapes.

#### *Competitive Assessment*

85. Within Li-ion, Panasonic produces only cylindrical and prismatic batteries, while Sanyo produces all three types of configuration (including polymer).

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<sup>38</sup> See replies to questions 20 of the questionnaire to portable rechargeable battery customers from 14.8.2009.

86. Sanyo is currently the market leader while Samsung and Sony seem to be the strongest competitors followed by Panasonic. Other competitors like BYD, LG Chemical and HitachiMaxell have been able to enter the market successfully and gain already significant market shares.

Li-ion - all	Li-ion (total)		Cylindrical Li-ion		Prismatic Li-ion	
	Global	EEA	Global	EEA	Global	EEA
Panasonic	[10-20%]	[5-10%]	[10-20%]	[5-10%]	[5-10%]	[5-10%]
Sanyo / SGS <sup>39</sup>	[20-30%]	[30-40%]	[30-40%]	[30-40%]	[20-30%]	[30-40%]
<b>Combined</b>	<b>[30-40%]</b>	<b>[40-50%]</b>	<b>[50-60%]</b>	<b>[40-50%]</b>	<b>[30-40%]</b>	<b>[40-50%]</b>
Samsung	[10-20%]	[20-30%]	[10-20%]	[20-30%]	[10-20%]	[20-30%]
Sony	[10-20%]	[10-20%]	[20-30%]	[20-30%]	[0-5%]	[10-20%]
BYD	[5-10%]	[10-20%]	[0-5%]	[0-5%]	[10-20%]	[10-20%]
LG Chemical	[5-10%]	[0-5%]	[5-10%]	[5-10%]	[0-5%]	[0-5%]
China BAK	[5-10%]	[0-5%]	[0-5%]	[0-5%]	[10-20%]	[0-5%]
HitachiMaxell	[5-10%]	[0-5%]	[5-10%]	[0-5%]	[10-20%]	[0-5%]
Li-Shen	[0-5%]	[0-5%]	[0-5%]	[0-5%]	[5-10%]	[0-5%]
A123 Systems	[0-5%]	[0-5%]	[0-5%]	[0-5%]	[0-5%]	[0-5%]

Parties' best estimates of sales in value for 2008

87. The proposed transaction would lead to market shares of [30-40%] world-wide and [40-50%] EEA-wide for the merged entity for the broader market of Li-ion portable rechargeable batteries. A further sub-segmentation into the different configuration would lead to a combined market share of [50-60%] in cylindrical Li-ion cells worldwide (Sanyo [30-40%], Panasonic [10-20%]) and EEA-wide [40-50%] (Sanyo [30-40%], Panasonic [5-10%]). In prismatic Li-ion cells the combined market shares would be [30-40%] world-wide (Sanyo [20-30%], Panasonic [5-10%]) and [40-50%] EEA-wide (Sanyo [30-40%], Panasonic [5-10%]). As mentioned, there is no overlap in polymer Li-ion batteries.
88. The market investigation confirmed the Parties' submission that the Li-Ion market is fast growing and characterized by a high rate of innovation. There are currently a significant number of market players active in the Li-Ion battery market. The market investigation confirmed the presence of strong competitors on the market, in particular Samsung, Sony and LG. Also, new competitors have and are entering the market and gaining substantial market shares<sup>40</sup>.
89. The market investigation also indicates that the Parties are not each other's closest competitor in the Li-Ion battery market. The broad majority of respondents to the

<sup>39</sup> In 2003, Sanyo established a joint venture with GS Yuasa, called SANYO GS Soft Energy ("SGS"), which is engaged in the development, production and sale of prismatic Li-Ion cells and battery packs.

<sup>40</sup> See replies to questions 39 and 40 of the questionnaire to portable rechargeable battery customers from 14.8.2009.

market investigations indicated that the merged entity will be facing enough competitive force from other Li-Ion battery manufactures<sup>41</sup>.

90. The existence of strong competitors is confirmed by the tendering databases<sup>42</sup> obtained from the Parties. Although Panasonic took part in [...] tenders for Sanyo's existing Li-ion cylindrical customers ([...%] by value), both [...] were competitors alongside Panasonic and Sanyo in [...%] of these cases. In the remaining [...%] of cases, Panasonic and Sanyo bid alongside [...] ([...%]) and [...] only ([...%]). Very similar conclusions can also be drawn for Li-ion prismatic batteries. For Panasonic's tendering data, [...] bid alongside the merging Parties in [...%] of cases (by value) for prismatic Li-ion batteries, and other competitors such as in particular [...] are present in cylindrical Li-ion battery tenders as well.
91. In addition, the market investigation indicated that major competitors of the Parties have currently enough spare capacity. The key existing market players of the Parties explained that they are increasing their capacities by building up new production facilities which will come on stream in the near future<sup>43</sup>.

#### *Conclusion*

92. In the light of the above, the proposed transaction does not raise serious doubts in the market(s) for portable Li-Ion batteries.

### **2.3 RECHARGEABLE COIN-SHAPED BATTERIES**

#### *Relevant product market*

93. Rechargeable coin batteries have very limited capacity and therefore are suitable primarily for use as back-up power supplies in devices that obtain their main power elsewhere. They are used principally as back-up power for real time clocks in mobile phones and digital still cameras as well as in certain other applications including watches, laptops and keyless entry systems in the automotive sector.
94. Rechargeable coin-shaped batteries use lithium as the anode<sup>44</sup> but come in different sub-chemistries according to differences in the cathode.<sup>45</sup>

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<sup>41</sup> See replies to questions 48 of the questionnaire to portable rechargeable battery customers from 14.8.2009.

<sup>42</sup> These databases comprise tenders launched by third party customers for the supply of Li-ion batteries from battery manufacturers.

<sup>43</sup> See replies to questions 48 of the questionnaire to portable rechargeable battery competitors from 14.8.2009. Indeed, the same market players substantially increased their capacities in the past, and thus their future plans seem to be likely to be carried out.

<sup>44</sup> The case refers to lithium rechargeable coins. NiMH rechargeable coins also exist, albeit they are commercialised in a limited extent. The Parties are not active in the manufacture or sale of NiMH rechargeable coins.

<sup>45</sup> These sub-chemistries (and their respective voltages) are: Manganese lithium ("ML") 3V; Niobium lithium ("NBL"); 2V; Molybdenum-ozone and lithium-silicon alloy ("HB") 3V; Lithium magnesium and

95. The Parties submit that the Commission can leave open the question whether rechargeable coin-shaped batteries belong in one or more product markets based on sub-chemistries since Sanyo's presence is very limited in the EEA.
96. The market investigation has indicated that customers of rechargeable coin shaped batteries are not able to switch their purchases across the different sub-chemistries because of the different technical characteristics of the batteries (most importantly in terms of cycle life and capacity). Furthermore, market respondents confirm that supply side substitutability between the different sub-chemistries is limited. However, competition concerns can be substantiated at both a broad (encompassing all sub-chemistries) and narrow (at sub-chemistry level) product market definition. Therefore the precise scope of the product market can be left open.

*Relevant geographic market*

97. The Parties argue that the market for rechargeable coin shaped batteries is worldwide in scope since these batteries are mainly produced in Asia, are traded globally and prices do not vary meaningfully by region. The market investigation confirmed that customers source worldwide and all the manufacturing is taking place in Asia. However, ultimately, the market definition can be left open, as the transaction would lead to competition concerns irrespective of the precise geographic market delineation.

*Competitive assessment*

98. On the basis of information contained in the notification, the global market for rechargeable coins is worth approximately EUR [...] million whilst sales in the EEA amount to EUR [...] million.
99. The Parties submit that that rechargeable coin-shaped batteries are being displaced by other types of power solutions such as capacitors (which are both smaller and less costly) most notably in mobile phones<sup>46</sup>. The Parties also argue that given the small presence of Sanyo in the EEA and the relatively low costs of installing a new coin line, the proposed transaction would not give rise to any competition concerns.
100. The Parties have very high market shares at both an EEA and worldwide level for all chemistries considered together as well as in the main sub-chemistry (ML) which represents approximately half of global sales by value of all rechargeable coin-shaped batteries.<sup>47</sup> The strongest competitor, Seiko, is active in the HB sub-chemistry<sup>48</sup> which has some technical differences with ML but competes with the Parties' ML batteries for mobile phone applications. However, even in a market definition including HB and

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lithium titanium ("MT/TL") 1.5V; Lithium manganese oxide and lithium silicon alloy ("MS/UT"), 3V; Lithium titanium cobalt ("CTL"), 2.5V; Vanadium pentoxide lithium ("VL"), 3V.

<sup>46</sup> The Parties submit that some mobile phone manufacturers have designed models that no longer need a rechargeable coin-shape battery or capacitor for the real time clock. Rather, these models obtain the time of day directly from the telecoms service network.

<sup>47</sup> The sales of ML sub-chemistry as a proportion of total rechargeable coin-shaped battery sales is less significant in the EEA than it is on a global basis.

<sup>48</sup> Seiko is the only manufacturer of the HB sub-chemistry.

ML the Parties would have a combined market share of more than [60-70%]. As regards other sub-chemistries within rechargeable coin-shaped batteries, it should be noted that the Parties are the only manufacturers and suppliers of NBL and MT/TL sub-chemistries and therefore the proposed transaction would create a monopolist supplier for these two sub-chemistries. In the remaining sub-chemistry, MS/UT, where both Parties are active, the proposed transaction would reduce the number of suppliers from three to two.<sup>49</sup>

Rechargeable coins	All sub-chemistries		ML chemistry	
	Global	EEA	Global	EEA
Panasonic	[30-40]	[60-70]	[30-40]	[10-20]
Sanyo	[20-30]	[5-10]	[50-60]	[80-90]
<b>Combined</b>	<b>[60-70]</b>	<b>[70-80]</b>	<b>[90-100]</b>	<b>[90-100]</b>
Seiko	[20-30]	[20-30]	[0-5]	[0-5]
Maxell	[0-5]	[0-5]	[5-10]	[0-5]

101. In the market investigation it was broadly acknowledged that the Parties are each other's closest competitors as they are able to offer a consistent product in terms of quality that is particularly suited to mid and high-end-applications. For several customers the Parties are the only two suppliers of rechargeable coin-shaped batteries and are seen as the only suppliers that are able to provide a comprehensive offering of different sub-chemistries of rechargeable coin-shaped batteries.
102. The Parties' claim that demand for rechargeable coin-shaped is declining was put in question by the market investigation which indicated that new applications are being developed (tools, metering, blue tooth). The research and development dedicated by the Parties to rechargeable coins is also relatively (as a share of sales) high when compared to other batteries. [Confidential information about Sanyo's future plans]. Capacitors, that according to the Parties will capture demand from rechargeable coins, are seen by the majority of the respondents to the market investigation as an imperfect alternative since they do not meet the capacity (energy) requirements or the reliability for the most important end-applications.
103. The Parties also suggested that entry in the market is relatively easy. However, the market investigation has not confirmed the Parties' estimates of the cost and time required to enter the market (indeed the costs were indicated by some respondents to be almost ten times higher than the Parties' estimates). Moreover, the know-how to produce high quality small sized coin-shaped batteries is not easily acquired.
104. Several market participants raised concerns that the proposed transaction could lead to higher prices and lower quality products for rechargeable coin-shaped batteries.

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<sup>49</sup> As Panasonic is already the sole manufacturer and supplier of VL and CTL sub-chemistries, the proposed transaction would not change the competitive conditions if the relevant product market were to be defined at the level of these sub-chemistries.

## *Conclusion*

105. In view of the high market share that the merging parties would have after the proposed transaction and the results of the market investigation outlined above, the Commission has concluded that the proposed transaction would give rise to serious doubts in the market for rechargeable coin-shaped batteries, irrespective of the precise product and geographic market delineation. The Parties submitted commitments to address the competition concerns identified.

### **3. Rechargeable batteries for automotive applications**

#### *Relevant product market*

106. Batteries for hybrid electric vehicles (“HEVs”), plug-in HEVs (“PHEVs”) and pure electric vehicles (“EVs”) are developed from the NiMH and Li-ion technologies that are used in portable batteries. These types of vehicles, which are currently sold in limited volumes in comparison to conventional vehicles, can be seen as a response to the need to reduce vehicle emissions and fuel consumption by either partnering or replacing the vehicle’s internal combustion engine with an electric motor.<sup>50</sup>
107. NiMH and Li-ion batteries for automotive applications can be supplied in one of two ways: either on their own (in what are known as “battery stacks” or “modules”) which consist of a number of cells that are similar to those used in portable battery-powered devices or integrated into a battery system.
108. A battery system consists of the battery stack; various contactors, resistors, and detectors/sensors; an electronic control unit (“ECU”); a battery management system (“BMS”); cooling vents; and various plugs/connectors<sup>51</sup>, all of which are assembled in a case (sometimes called the “crash box”).<sup>52</sup>
109. The Parties submit that car manufactures in Asia and the United States, as they gain experience in HEV design and performance, increasingly are developing their own battery systems and/or outsourcing them to independent assemblers – so-called “Tier 1” suppliers that purchase battery modules from the cell manufacturers and then assemble integrated systems for onward sale. They submit that this trend is significantly less pronounced in Europe, where car manufacturers tend to source complete battery systems, rather than individual components, as they have less

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<sup>50</sup> The term hybrid electric vehicle is used to describe a vehicle that combines a conventional internal combustion engine (“ICE”) with one or more electric motors. An electric vehicle, on the other hand, does not have an ICE and therefore relies entirely on battery power. Plug-in hybrid electric vehicles or PHEVs, which can be seen as an intermediate category in terms of vehicle electrification, have an ICE but differ from HEVs in that their battery can be recharged through external sources whereas the other systems recover electric energy from kinetic energy during the breaking process (i.e. “regenerative breaking”).

<sup>51</sup> The pack’s plugs and connectors provide the means by which the battery stack is charged and depleted (i.e. used to power the vehicle). The other components inside the pack are used to monitor conditions in the stack and to break the circuit (terminating the chemical reaction in the cells) if it becomes unsafe/unstable due, e.g., to overheating or a build-up of internal pressure.

<sup>52</sup> While the Commission made no express mention of a number of these components in *Robert Bosch/Samsung/JV*, the Parties believe that these must have been subsumed in its discussion of the BMS. All of the elements noted above are essential parts of a complete battery pack.

experience in the HEV sector than their US or Asian counterparts.<sup>53</sup> In any event, the Parties do not consider that the distinction between modules and systems requires the definition of separate product (or geographic) markets as European car manufacturers have recourse to the same global supply base, in their development and production of HEVs, as car manufacturers in all other parts of the world.

110. The Commission has considered rechargeable batteries for automotive applications and battery systems in a number of recent decisions but ultimately left the relevant product (and geographic) market definitions open.<sup>54</sup> In *Robert Bosch/Samsung/JV*, for example, the Commission considered a number of alternatives in its competitive assessment of the transaction which took into account both battery chemistries and the level of system integration as potential considerations in defining the relevant product markets.<sup>55</sup> As the Parties in the present case have noted, however, the Commission did not suggest in *Robert Bosch/Samsung/JV* that there might be a separate market for NiMH battery systems for HEVs. The Parties believe that this was correct as any future sales of NiMH systems, in its view, will be subject to significant competitive constraint from Li-Ion systems.
111. Although NiMH is a proven technology in HEVs, it has certain limitations in terms of weight and energy density when compared to Li-ion which, as acknowledged by respondents to the Commission's market investigation, appear to make it unsuitable for use in PHEV and EV as the degree of vehicle electrification and the demands placed on the battery increase. The Parties submit that all future vehicle programmes (whether HEV, PHEV or EV) are likely to use Li-ion and that competition for the supply of NiMH has essentially finished. In any event, the Parties submit that the Commission may leave open the precise definition of the relevant product market(s) in the present case. This is because HEV batteries are an extremely dynamic sector, in which customers exercise significant buying power and therefore the proposed transaction cannot give rise to any market power howsoever the market is defined.
112. The market investigation in the present case has demonstrated from both a demand and supply-side perspective that Li-ion batteries for automotive applications, which have yet to be sold in commercially significant quantities, are likely to constitute a distinct product market from NiMH batteries.<sup>56</sup>

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<sup>53</sup> The Parties submit that HEV development has proceeded more slowly in Europe than in other parts of the world because the EU and its Member States have adopted various measures to promote diesel-powered cars, and HEVs offer fewer cost advantages over diesel than they do over traditional petrol engines. Accordingly, demand for HEVs has grown relatively slowly (vis-à-vis other regions) in the EEA.

<sup>54</sup> COMP/M.5227 - *Robert Bosch/Samsung/JV*, decision of 18 August 2008, COMP/M.5452 - *Daimler/Evonik/Li-Tec* (simplified procedure) decision of 25 February 2009 and COMP/M.4031 - *JCI/SAFT/JV* (simplified procedure) decision of 19 December 2005..

<sup>55</sup> The alternative possible market definitions considered were (i) a market for Li-ion battery systems used in HEVs, (ii) a market for battery systems used in HEV including NiMH, (iii) a market for components for electric drive trains in HEV and (iv) a market for integrated systems for HEV comprising several components. As neither Panasonic nor Sanyo is engaged in the development of components for electric drive trains, the last two alternative product market definitions considered in *Robert Bosch/Samsung/JV* are not relevant in the present case.

<sup>56</sup> As Li-ion technology has yet to be commercialised on a significant scale in automotive applications, market shares at the present time are not meaningful.



113. In terms of demand-side considerations, market participants have indicated that they expect the performance of Li-ion batteries to improve given the substantial level of investment in research and development activities that is being made in the technology by numerous companies. Moreover, as economies of scale are achieved in the mass production of Li-ion batteries, respondents expect prices for Li-ion batteries and systems to fall. Therefore, it was widely acknowledged by respondents that future vehicle programmes would focus on Li-ion technology and that there would not be a return to NiMH batteries even if the price of Li-ion batteries were to increase by a non-negligible amount relative to NiMH prices (the so-called ‘SSNIP’ test).
114. In terms of supply-side considerations, the market investigation confirmed the absence of supply-side substitutability between the two battery technologies as companies active in Li-ion, many of which have not previously been active in NiMH, indicated that they would not be able to switch their production lines to NiMH.<sup>57</sup>
115. The results of the market investigation concerning the relevance of a distinction between modules and battery systems in terms of defining product markets were mixed. A number of OEMs indicated that they source either modules or battery systems on a case by case basis depending on the needs of a particular vehicle model whilst others currently have a preference for either modules or systems. At the same time, it was acknowledged by some market participants that OEMs are increasingly likely in future to favour the procurement of modules over systems as they become more familiar with the technology and seek to develop within their own organisations the capability to integrate modules into their vehicles. Moreover, many OEMs indicated that they would be able to switch their procurement programmes between modules and battery systems (and vice versa) were the cost of one to increase significantly compared to the other.
116. For the purposes of the present case, however, as the proposed transaction does not raise serious doubts under any of the alternative possible market definitions discussed above, i.e. possible markets for NiMH and/or Li-ion modules and/or battery systems, the precise scope of the relevant product market(s) can be left open.

*Relevant geographic market*

117. The Parties submit that the scope of the geographic market is global as car manufacturers have recourse to all battery manufacturers operating worldwide when considering new vehicle programmes. The Parties further submit that a global geographic is consistent with the Commission’s findings in *Robert Bosch/Samsung/JV* and its decisional practice relating to the supply of OEM components for the automotive industry generally.<sup>58</sup>
118. The market investigation in the present case has suggested that the scope of the geographic market(s) at issue is at least EEA-wide and possibly global. In this regard, a number of respondents drew attention to the fact that the transport of Li-ion batteries

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<sup>57</sup> The results of the market investigation concerning competitors’ ability to switch between various chemical formulations and cell designs that are being developed within Li-ion pointed to a higher degree of supply-side substitution than is the case for Li-ion and NiMH.

<sup>58</sup> See for example Case COMP/M.4878, *Continental/Siemens VDO*, decision of 29 November 2007.

and systems by air is subject to regulation and may require certain compliance costs. However, as the proposed transaction would not raise concerns even on the basis of an EEA-wide market, the precise scope of the relevant geographic market can be left open.<sup>59</sup>

### *Competitive assessment*

119. Sanyo is active in the manufacture and supply of NiMH batteries and battery systems for automotive applications and is in the process of beginning the production and commercialisation of the same using Li-ion. Panasonic is active in the manufacture and supply of NiMH batteries only. It does not have the capability to offer NiMH battery systems independently of the joint venture it has with Toyota (Panasonic EV Energy Co., Ltd. or “PEVE”) and [...]. The proposed transaction would therefore not give rise to any overlap between the merging parties’ activities in Li-ion technology for automotive applications.
120. PEVE was established in 1996 with Panasonic holding [>50%] of the voting rights and Toyota [<50%]. These proportions were reversed pursuant to a Memorandum of Understanding (“MOU”) entered into on 1 April 2005 and subsequently put into effect by a new Joint Venture Agreement executed on 3 October 2005.<sup>60</sup>
121. PEVE is managed by a Board of Directors, of whom Toyota designates a greater number than the number of members designated by Panasonic. [Confidential information relating to the internal management of PEVE].<sup>61</sup> For the purposes of the present decision, however, it is not necessary for the Commission to reach a conclusion as to the nature of control exercised by PEVE’s shareholders over the joint venture or the extent to which PEVE should be viewed as being an active on the merchant market as this would not change the competitive assessment of the proposed transaction either for NiMH or Li-ion.
122. Although the volume of NiMH batteries and systems manufactured and sold is expected to increase significantly in the near future as a number of vehicle models using this technology are launched, the market investigation has confirmed that competition to supply NiMH for automotive applications (batteries and systems) has essentially ended. This is because once an OEM decides on its battery system, it is extremely difficult to switch to a different battery supplier, and thus the given the supplier becomes an ex-post monopolist supplier for the particular OEM. Thus, as shown in the following table, although the transaction would create a leading player in NiMH, it does not give rise to any competition issues.

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<sup>59</sup> Li-ion batteries are classified as Class 9 Dangerous Goods by the UN and IATA meaning that certain transportation measures must be observed. In the Parties’ view, the time and costs associated with complying with such measures is not so significant as to impact Li-ion production and sales.

<sup>60</sup> [Confidential information relating to the internal management of PEVE as between the joint venture partners].

<sup>61</sup> [Confidential information relating to the internal management of PEVE as between the joint venture partners]. Accordingly, Panasonic’s interest in PEVE does not prevent Panasonic from acting as an independent supplier of battery solutions that might compete with those developed or offered by PEVE.

*Global NiMH market shares by value for HEVs (2008)*<sup>62</sup>

	Market shares calculated including all PEVE sales (i.e. sales to Toyota)	Market shares calculated excluding PEVE sales to Toyota
PEVE (Toyota/Panasonic JV)	[70-80%]	[10-20%]
Sanyo	[10-20%]	[40-50%]
Panasonic	[5-10%]	[10-20%]
Cobasys	[5-10%]	[20-30%]

123. The market investigation has confirmed that car manufacturers and battery suppliers alike are heavily focussed on Li-ion for future model programmes (whether hybrid, plug in or pure electric) and that Li-ion is likely to replace NiMH in the mid-term. It could thus be argued that [...] the transaction may reduce the number of potential competitors in the Li-ion market, which may have a negative effect on the degree of development and competition in the Li-ion battery market.
124. Contrary to NiMH, there is considerable investment going into Li-ion for automotive applications (both modules and systems) and the sector is characterised by a large number of joint ventures and collaborative developmental projects between car manufacturers, battery suppliers and/or Tier 1 suppliers.
125. For example, Honda has formed a joint venture with GS Yuasa (“Blue Energy Co, Ltd”) by which Honda and GS Yuasa plan to commit ¥25 billion to the construction of a new Li-Ion plant which is to due to begin production in the autumn of 2010.<sup>63</sup> GS Yuasa has also established a joint venture with Mitsubishi Motors, called Lithium Energy Japan (“LEJ”) which is also engaged in the development and production of Li-Ion HEV batteries.<sup>64</sup> Nissan, NEC and NEC-Tokin have a joint venture, called Automotive Energy Supply Corporation (“AESC”) which is believed to be engaged in the development and production of Li-Ion HEV batteries for Mazda (Ford), Nissan, and Subaru.<sup>65</sup> Other joint ventures that have been established in the area of Li-ion for automotive applications include the joint ventures between Evonik Industries and Daimler,<sup>66</sup> Johnson Controls Inc and Saft Groupe SA,<sup>67</sup> Robert Bosch and Samsung SDI<sup>68</sup> and Hitachi, Hitachi Maxell and Shin-Kobe Electric Machinery.<sup>69</sup> In addition to

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<sup>62</sup> Parties’ reply to the Commission’s request for information dated 28 August 2009

<sup>63</sup> Form CO and Honda corporate website at <http://world.honda.com/news/2009/c090421Blue-Energy/>

<sup>64</sup> Form CO and GS Yuasa corporate website at <http://www.gs-yuasa.com/us/attention/pdf/20071212e.pdf>

<sup>65</sup> Form CO and AESC website at <http://www.eco-aesc.com/en/overview.html>.

<sup>66</sup> COMP/M.5452 Daimler/Evonik/JV, decision of 25 February 2009

<sup>67</sup> COMP/M.4031 JC/Saft /JV, decision of 19 December 2005

<sup>68</sup> COMP/M.5227, Robert Bosch/Samsung/JV, decision of 18 August 2008

<sup>69</sup> Form CO and Hitachi corporate website at [http://www.hitachi.com/New/cnews/040630\\_040630.pdf](http://www.hitachi.com/New/cnews/040630_040630.pdf)

these joint ventures, a number of other competitors are active including LG Chemical, Toshiba, A123 Systems, Alelion Batteries AB and BYD.

126. Although it is not yet clear which of the companies listed above or indeed other companies that may yet enter the market will ultimately succeed in the long term (a fact that has been highlighted by a number of respondents in the market investigation) it has been widely acknowledged that Li-ion will be the battery of choice for car manufacturers because of its performance advantages vis-à-vis NiMH.
127. Notwithstanding the perceived technical advantages of Li-ion, the Commission also examined whether any factors, such as safety issues, could lead to a delay in the widespread adoption of Li-ion or even a return to use of NiMH technology where it is recalled the merged entity would have an important market position.
128. On the basis of responses to the market investigation and other information gathered during the course of the investigation, the Commission concluded that even if issues arise in future relating to the use of Li-ion in automotive applications, this would more likely than not only delay the take up of the technology for a short time and would not lead OEMs to return to NiMH. A number of market participants pointed to the fact that Li-ion powered vehicles are already undergoing durability tests or have been successfully commercialised in certain countries (e.g. the Nissan *Tino* and Toyota *Vitz* in Japan). In addition, it should be noted that significant investments in Li-ion are being made by numerous companies and other organisations sometimes with government support.<sup>70</sup> This not only suggests confidence on the part of commercial entities and certain policy makers in the future success of Li-ion as a technology but also lends support to the belief that even if one or more of these entities were to experience difficulties having introduced Li-ion, it is likely that a sufficient number of alternatives would still exist on the market. Moreover, the significant level of investment in Li-ion can in itself be seen as providing an incentive for market participants to overcome any unforeseen technical issues and seek a return on their investment via a successful commercialisation of their Li-ion offering. At the same time, it appears that car manufacturers would have little incentive to return to NiMH given its limitations and the time necessary to design and introduce a new NiMH-powered vehicle. This is all the more so as only a limited number of car manufacturers adopted NiMH on any significant scale meaning that NiMH would be an untried and untested technology for the majority of car manufacturers.
129. The market investigation did reveal some concerns regarding the merged entity's future position in Li-ion. One respondent indicated that the merged entity, thanks to its position in NiMH, would be able to delay the adoption of Li-ion by car manufacturers by offering its NiMH batteries and systems at low prices. This would have the effect of reducing the potential opportunities of suppliers active only in Li-ion. At the same time, another respondent indicated that the merged entity would be able to take advantage of its position in NiMH and raise prices. It was also suggested that the merged entity would be able to establish a strong position in Li-ion as its existing NiMH customers could decide to migrate to its Li-ion batteries.

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70 For example, the US Government has recently announced \$2.4 billion of grants under the American Recovery and Reinvestment Act to accelerate the manufacturing and deployment of the next generation of U.S. batteries and electric vehicles (see <http://www.energy.gov/news2009/7749.htm>)

130. In the case of the first concern, it seems unlikely that such a strategy could delay the introduction of Li-ion batteries as most car makers do not have any plans to develop NiMH-based vehicles in the future as they now clearly focus on Li-ion batteries. Even in the case of those manufacturers that are in the process of bringing new NiMH-based vehicles to the market, commercial negotiations for the selection of battery supplier have been concluded. Any decrease in prices would not entice manufacturers that are focusing on Li-ion vehicles to switch back to NiMH vehicles, especially in view of NiMH's limitations that appear to preclude it from use in PHEV and EV. At the same time it would only lower revenues from OEMs that are currently producing NiMH-based vehicles, as these manufacturers are also developing Li-ion vehicles irrespective of their current NiMH-based vehicle offerings. In addition, any attempt to delay the introduction of Li-ion on the part of the merged entity would preclude it from potential revenues in Li-ion battery and systems where Sanyo has made significant investments and other competitors are already present.
131. In the case of the last concern mentioned above, the Commission's investigation has confirmed that car manufacturers which are currently purchasing NiMH batteries and systems from the merging parties are not concerned by the proposed transaction. In addition, it is not certain that the merged entity would be able to take advantage of its position in NiMH to secure a leading position in Li-ion. First, it does not seem plausible that the merged entity could take advantage of its strong position in NiMH, as the competition for these batteries has ended, and OEMs are "locked in" to a particular battery manufacturer. Moreover, the market investigation has demonstrated that prior experience in NiMH is not a prerequisite for entry into Li-ion. Lastly, given that the merged entity will face a number of credible competitors in Li-ion that are likely to be able to produce and supply an equivalent offer to the merged entity in Li-ion, it appears unlikely that the merged entity will be in a position to leverage its position in NiMH into Li-ion and thereby foreclose its competitors access to a sufficient customer base.
132. In view of the above considerations, the Commission concludes that the proposed transaction does not give rise to serious doubts in the supply of NiMH modules or systems for automotive applications since competition to supply this technology has essentially ended. The Commission also concludes that the proposed transaction does not give rise to serious doubts in the supply of Li-ion modules or systems for automotive applications *inter alia* given the large number of competitors and developmental projects being undertaken in this technology.

## C. Consumer electronic goods

### *Introduction*

133. The proposed transaction would potentially result in certain affected markets for consumer electronic goods depending on the geographic market definition. These product markets are: digital still cameras, voice recorders, DVD player-recorders, home audio systems, flat-panel televisions, digital projectors, microwave ovens, air conditioners and camcorders<sup>71</sup>.
134. In the majority of the affected markets, as described further below, the Parties' activities overlap only in a limited number of national markets and in general increments are small.

### **1 Flat-panel televisions**

#### *Relevant product market*

135. Flat-panel televisions are colour receivers of broadcast and closed-circuit A/V (audiovisual) signals that use either liquid crystal displays (LCDs) or plasma screens. LCD-TV screens are made of two glass polarising filters whereas plasma screens consist of two glass plates. They each offer benefits and drawbacks vis-à-vis the other. LCD screens reportedly reflect less light and use less power than plasma screens but they generate poor black levels (i.e. poor image detail) and typically have slower response times than plasma.
136. The Commission has previously considered flat panel TVs in *Alba/Beko/Grundig*.<sup>72</sup> In that case, the Commission noted that a distinction between LCD and plasma TVs was relevant from the demand side but ultimately left open the precise market definition.
137. The results of the market investigation in the present case have not been conclusive on whether end consumers switch their demand between the two technologies<sup>73</sup>. However, as the proposed transaction would not raise concerns either on the basis of a potential product market comprising both LCD and plasma TVs or narrower product markets distinguishing between LCD and plasma TVs respectively, the precise product market definition can be left open.

#### *Relevant geographic market*

138. The Parties submit that the geographic market for flat-panel TVs is EEA-wide. The result of the market investigation in the present case has not been conclusive as to whether the scope of the relevant geographic market is indeed EEA-wide or national.

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<sup>71</sup> The market for camcorders would also be affected at an EEA level on the basis of GfK panel data (>15%). This would not be the case however according to the Parties' own estimates ([<15%]).

<sup>72</sup> See COMP/M.3381 – *Alba/Beko/Grundig* decision of 29 April 2004

<sup>73</sup> Although it was noted that plasma TVs, unlike LCD TVs, are generally not available in smaller screen sizes.

As the proposed transaction does not raise concerns under either alternative, the precise scope of the geographic market definition can be left open.

### *Competitive assessment*

139. It should be noted that Sanyo only offers LCD TVs in the EEA whereas Panasonic's principal focus is on plasma TVs. Therefore, the proposed transaction would not give rise to any overlap between the merging parties in the area of plasma TVs. Also, there are no affected markets for LCD TVs, given that Panasonic focuses on plasma technology, either at EEA or national level.
140. In the case of a broader product market of flat-panel TVs comprising both LCD and plasma TVs, the proposed transaction would result in affected markets at a national level in the United Kingdom and the Czech Republic. However, the overlap is [ $<5\%$ ] and the combined market share of the Parties is [ $<20\%$ ]. In both countries Samsung will remain the market leader even post transaction and the merged entity will also face significant other competitors such as Sony, LG, Philips and Toshiba. Furthermore, the respondents to the market investigation have indicated that the Parties are not each other's closest competitors with Panasonic serving the high end while Sanyo the low end.
141. In view of the above considerations, it is concluded that the proposed transaction does not raise concerns in the flat-panel TV markets.

## **2 Digital projectors**

### *Relevant product market*

142. Digital projectors are devices that are capable of taking a video signal from a computer (or other digital input device) and projecting the corresponding image onto a screen or other surface through the use of lenses and very bright light.
143. Digital projectors typically employ either an LCD device or digital light processing ("DLP") to generate the image that will be projected onto the viewing screen. According to the Parties, both LCD and DLP technologies are widely used. LCD projectors provide truer colour reproduction but contain organic substances that lose their luminescence with age whereas DLP provides higher resolution and greater durability over time.<sup>74</sup>
144. The Parties submit that end users choose a projector depending on which parameters they attach most importance to but they normally will be able to choose from a range of projectors that meet their needs and expectations. Moreover, they submit that from a supply-side perspective, there is full substitutability across the range of projectors with the Parties and their main competitors all able to offer a full range of projectors from relatively standard models that are intended for use in an environment with limited or no ambient light to models that are capable of projecting clear images in fully lit

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<sup>74</sup> A projector that affords high brightness (measured in lumen ("Lm")) generally can be used in more demanding environments. Resolution refers to the number of distinct pixels in each dimension (columns and rows) that can be displayed, and determines both a projector's compatibility with the signal sent by the computer and the sharpness of the projected image

rooms. They therefore submit that DLP and LCD form part of a single product market of digital projectors.<sup>75</sup>

145. The market investigation has confirmed the Parties' submission that DLP and LCD projectors form part of one and the same product market as respondents have indicated that end consumers easily switch between the two technologies and often base their choice of digital projector on price rather than the underlying technology.<sup>76</sup>

*Relevant geographic market*

146. The notifying party submits that the market for digital projectors is EEA-wide in scope. This has been confirmed by the market investigation in the present case which has indicated *inter alia* that the range of projectors offered is the same across the EEA and there are no significant price differences between EEA Member States.

*Competitive assessment*

147. At an EEA-wide level, the proposed transaction would not give rise to an affected market as the merged entity's market share would remain below 15%. In the event that the geographic market is considered to be no broader than national in scope, affected markets would arise in the following four Member States: Austria ([10-20%]), Finland ([10-20%]), Germany ([10-20%]) and the United Kingdom ([10-20%]). However, in each instance the merged entity's market share would remain relatively limited and would not exceed the level of 25% such that the proposed concentration would not be liable to impede effective competition.<sup>77</sup>
148. In addition, the market investigation has generally confirmed that the Parties are not viewed as each other's closest competitor. While Panasonic and Sanyo each offer some LCD and DLP projectors, Panasonic markets mainly DLP projectors whereas Sanyo markets mainly LCD projectors. The merged entity would continue to face competition from a number of credible competitors including Epson, Barco, Christie Digital, NEC and Optoma.
149. In light of the above considerations, it is concluded that the proposed transaction does not give rise to concerns in the market of digital projectors.

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<sup>75</sup> The market investigation also highlighted the existence of a third type of digital projector technology, namely LCoS (liquid crystal on silicon). Neither Panasonic nor Sanyo produces or sells LCoS projectors. The Parties submit that because of their relatively high cost, LCoS projectors account for only 1-3% of digital projector sales in the EEA. Their inclusion or exclusion would therefore not materially affect the competitive assessment in this case and the question whether LCoS belong to the same product market as LCD and DLP projectors can be left open in the present case.

<sup>76</sup> See replies to questions 4 and 6 of the questionnaires to digital projector competitors and customers dated 18.8.2009.

<sup>77</sup> See "Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings", OJ C 31, 5.2.2004, paragraph 18.



### 3 Microwave ovens

#### *Relevant product market*

150. Microwave ovens are kitchen appliances that generate non-ionising microwave radiation to heat or cook food and liquids by a process of dielectric induction. Microwave ovens are made in different sizes (from countertop models to built-in units) and can have different product characteristics and additional features such as a grill or convection heating function. The Parties submit that end-consumers consider the entire range of different sizes, available features, styling when they are making their purchase and therefore belong to the same product market.
151. The market investigation has broadly confirmed the Parties' view. However, several market respondents have indicated that a distinction should be made between countertop models and built-in units. The precise product market definition can be left open in the present case as the proposed concentration does not lead to competition problems under any plausible market definition.

#### *Relevant geographic market*

152. The Parties submit that the geographic market for microwave ovens is generally EEA-wide but that the United Kingdom may be deemed to constitute a distinct geographic market given the relatively high acceptance of microwave cooking in that country. The market investigation indicated that national structures are important regarding the sourcing of microwaves; however, no significant price differences across Member States were identified. The precise geographic definition can be left open as no competition concerns arise under either scenario.

#### *Competitive assessment*

153. Both Panasonic and Sanyo sell only countertop microwave ovens (neither company sells built-in units). The market shares of the merged entity would be below 25% at both national and EEA level, under both a narrow (countertop vs. built-in) or a broad (microwave ovens) product market definition with the exception of the United Kingdom.
154. In the United Kingdom, the merged entity would have a share of [30-40%] (Panasonic [20-30%], Sanyo [5-10%]) on the basis of a potential product market of countertop microwaves only. A number of other competitors are present including Russell Hobbs, Sharp, LG, Hinary as well as Daewoo, Electrolux, Samsung and Bosch which will be able to exercise a competitive constraint on the merged entity.
155. It should be noted that Sanyo [...]. Market participants do not consider the Parties as each other's closest competitor and generally view Sanyo as serving the lower end of the market and Panasonic the high end. Sanyo is seen as a competitive player in the low and mid-range; moreover, there are a number of other competitors able to similarly set competitive prices. Panasonic is viewed as a stronger brand by market participants and being in closer competition with other manufacturers such as Sharp and LG.
156. Therefore, the Commission considers that the proposed transaction does not raise competitive concerns in the market of microwave ovens.

## 4 Air conditioners

### *Relevant product market*

157. Air conditioning is a mechanical process for controlling the humidity, temperature, cleanliness and circulation of indoor air.
158. The Parties submit that air-conditioning (AC) systems can be divided into two categories: residential and light commercial air-conditioning systems ("RLC")<sup>78</sup> on the one hand and commercial/industrial air-conditioning systems ("CI") on the other. This is broadly in line with previous Commission decisions where a distinction according to cooling capacities was seen as appropriate and the market for RLC was distinguished from other systems<sup>79</sup>.
159. In *Carrier Corporation / Toshiba* the Commission also considered without adopting a definitive position whether additional segmentation within RLC systems was appropriate, firstly between unitary systems ("monoblocks") and split systems<sup>80</sup> and thereafter between portable and window-rack systems in the case of monoblocks and ducted and ductless systems in the case of split systems.<sup>81</sup>
160. In any event, the exact definition of the product market(s) for RLC air conditioners can be left open in the present case as even on the basis of the narrowest market definitions previously considered by the Commission, the proposed transaction does not raise competition concerns.

### *Relevant geographic markets*

161. The Parties submit that the market for air-conditioners is EEA-wide in scope. In *Carrier Corporation / Toshiba* the Commission gave some indications that the markets for air-conditioning systems were at least EEA-wide whilst ultimately leaving the question open. However, in a later Commission decision<sup>82</sup>, although the question of

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<sup>78</sup> RLC systems are designed to condition the air in small to medium sized zones, such as homes, retail stores, restaurants, and small offices and hotels. They function by means of a compressor that moves a highly pressurized refrigerant between a cold coil and a hot coil. The liquid refrigerant evaporates in the evaporator coil, pulling heat out of indoor air and thereby cooling it. The hot refrigerant gas is then pumped into the condenser, where it reverts back to a liquid and releases the accumulated heat to the air flowing over the condenser's metal tubing and fins.

<sup>79</sup> See Case No IV/M.1433 – *Carrier Corporation / Toshiba* from 25 March 1999, paras. 14-16. In a subsequent decision, the Commission considered whether it was appropriate to distinguish between residential/small commercial systems and medium commercial systems but left the precise market definition open. See Case No COMP/M.4271 – *Daikin/Oyl* from 2 October 2006.

<sup>80</sup> Split systems comprise "through the wall" heat pump or centralised AV systems with the evaporator located inside the building and the compressor and condenser located outside the building.

<sup>81</sup> Portable systems are designed to be movable without any reinstallation whereas in a window rack system, the compressor, evaporator and condenser are encased in a single unit that is mounted on the outside of a building requiring a hot-air flue outlet to be inserted in a window. Ducted split air conditioners are integrated into the building structure itself and installed above the ceiling while ductless split systems are installed either on the inside walls of buildings or beneath the ceiling.

<sup>82</sup> See Case No COMP/M.4271 – *Daikin/Oyl*, decision of 2 October 2006, paragraphs 15-17.

the precise scope of the geographic market was again left open in the absence of competition concerns, the market investigation gave some indication that although products are generally homogeneous across Europe, some features of the markets point to differences among EEA countries.

162. The market investigation in the present case has indicated that there are indeed certain national differences which point more towards national markets than to an EEA-wide market. However, it is not necessary to take a stand on the geographic scope of these markets in the present case as there are no competition concerns under either alternative i.e. national or EEA-wide markets.

#### *Competitive assessment*

163. In the EEA, Panasonic sells only RLC systems and not CI systems while Sanyo sells both systems but is active in CI systems only to a very limited extent. Therefore, the proposed transaction would not give rise to any increment in market share in CI systems.
164. In the case of RLC and unitary systems in particular, it should be noted that Panasonic does not sell either portable or window-rack systems in the EEA and therefore the proposed transaction would again not give rise to any increment in market share in these market segments. In the case of split systems, as neither Panasonic nor Sanyo supplies ducted RLC systems in the EEA, the notified transaction would not result in any change in this product segment. Therefore, the main overlap between the merging parties is in the segment of ductless split RLC systems.
165. The Parties' combined market shares in the EEA for RLC systems is below 15% and therefore the proposed transaction would not give rise to an affected market. If the scope of the geographic market is considered to be no broader than national, the proposed transaction would give rise to an affected market in Sweden.
166. According to the Parties, demand in Sweden is focused almost exclusively on split systems. The Parties submit that in Sweden they are only active in ductless split RLC systems. Under such narrow product market the merged entity's market share would be [40-50%] with an increment of [20-30%]. However, there are strong competitors present on the market in Sweden with relatively high market shares such as Mitsubishi ([20-30%]) and Electrolux ([20-30%]). Moreover, the market investigation has shown that the Parties are generally not viewed as each other's closest competitor. In addition, competitors such as LG have successfully entered a number of other national markets in the EEA and have been able to gain market share. Another competitor, Daikin, which is the largest supplier of ductless split RLC systems in the EEA, has recently acquired its Swedish distributor with a view to strengthening its position on the Swedish market.<sup>83</sup> These competitors among others can therefore be expected to respond to any attempt by the merged entity to unilaterally raise prices by either entering the market in Sweden or increasing their sales if already present. In addition, the market investigation also suggested that further entry on the part of manufacturers located in China could be expected either on their own or in combination with European distributors under OEM agreements.

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<sup>83</sup> [http://www.daikin.eu/news/items/daikineurope\\_acquire\\_distributor\\_svenska.jsp#](http://www.daikin.eu/news/items/daikineurope_acquire_distributor_svenska.jsp#)

167. In light of the above considerations, it is concluded that the proposed transaction does not raise serious doubts in AC systems.

## **5 Camcorders**

### *Relevant product market*

168. Camcorders are portable devices whose primary function is to capture and record moving video imagery (with integrated audio signals). This primary function differentiates camcorders from other consumer products (e.g. mobile phones, personal media players, digital still cameras, and personal computers) that can capture and record moving video imagery but have designs that are optimized to perform other functions instead. Although a few analogue camcorders remain on the market, nearly all camcorders being sold today record A/V signals digitally.
169. According to the Parties, many camcorder models offer more than one recording media option (with, e.g. both an integrated hard disk drive and an external slot for a removable flash card or memory stick).
170. According to the notification, there are no systematic prices differences among camcorders that use different types of recording media. The Parties therefore submit that the product market should be defined as encompassing all camcorders.
171. The results of the market investigation in the present case have not been conclusive as regards the precise definition of the relevant product market(s) for camcorders. The majority of respondents considered that all camcorders should be viewed as belonging to one and the same product market though a number of respondents suggested that further segmentation on the basis of recording media or the definition of the camcorder (i.e. between standard and high definition) could be considered. For the purposes of the present case, however, as the proposed transaction would not give rise to competition concerns under any of the alternatives mentioned, the product market definition can be left open.

### *Relevant geographic market*

172. The Parties submit that the geographic market for camcorders is EEA-wide as the camcorder models that Panasonic, Sanyo, and their rivals sell in Europe are physically identical and CE-certified, regardless of the country of sale; transport costs account for a very small percentage of the sales value of camcorders, and are too low to have a limiting effect on cross-border trade within the EEA; and the leading manufacturers of camcorders do business in all or virtually all of the Member States.
173. The market investigation in the present case has indicated that the scope of the geographic market is likely to be EEA-wide as the type and price of models offered do not vary significantly by Member State. However, as the proposed transaction would not raise concerns even if the geographic market were considered to be no broader than national, this point can be left open.

### *Competitive assessment*

174. The proposed transaction would result in affected markets in the following 12 Member States for a market comprising all camcorders: Austria, Belgium, the Czech Republic, Denmark, Finland, Germany, Hungary, Poland, Romania, Slovakia, Sweden and the

United Kingdom. In the majority of cases, however, the increment in market share resulting from the proposed transaction would not be significant at less than [0-5%]. Even in the four countries where the increment would exceed [0-5%] (Austria, Belgium, Sweden and the United Kingdom) it would remain relatively modest at less than [0-5%] and the merged entity's market share would not exceed [10-20%] (Austria). Consequently, it is not anticipated that the proposed transaction would change the competitive landscape in these markets to any appreciable extent.

175. If the market is considered to be EEA-wide, the merged entity would have a market share of [>15%] using GfK panel data but [<15%] according to the Parties' own estimates and as such the proposed transaction would not give rise to an affected market.
176. Even if a further segmentation is considered either on the basis of the recording media used by the camcorder or its definition, the proposed transaction would not lead to competition concerns. In the case of the recording media used, the only overlap between the merging Parties' activities in the EEA is in solid-state ("flash") media (as Sanyo does not sell any camcorders using other types of recording media). Solid-state camcorders are relatively new on the market meaning that market shares of those companies that first commercialised such camcorders are not necessarily indicative of market power in the long term. This is evidenced by the entry of well-known competitors into this segment such as Sony and Canon which have gained significant market positions in a relatively short period of around [20-30%] each in the EEA. In the case of a segmentation according to camcorder definition, it should be noted that Sanyo's activities in standard definition camcorders are limited and would result in an increment of only [0-5%] at an EEA-level. As far as high-definition camcorders are concerned, the merged entity's share would be [10-20%] at an EEA-wide level with an increment of only [0-5%]. The merged entity would continue to face strong competition from the clear market leader, Sony, which has more than [50-60%] market share as well as a number of other competitors including Canon.
177. The market investigation has also indicated that the merging Parties are not each other's closest competitors and the merged entity will continue to face competitive pressure from a number of strong competitors including Sony, JVC-Kenwood and Samsung amongst others.
178. In light of the above considerations, the proposed transaction does not give rise to serious doubts in the market for camcorders whether on a national or EEA-wide basis.

## **6 Digital still cameras**

### *Relevant product market*

#### DSCs Market

179. Digital Still Cameras (DSCs) take still photographs by recording images via an electronic image sensor. According to the notifying Parties, DSCs comprise "compact" DSCs, digital Single Lens Reflex (SLRs) and "optical zoom" DSCs.
180. Compact DSCs are small lightweight cameras with single lens and relatively small image sensor which target amateur photography. Digital SLRs are larger and accommodate interchangeable lenses, larger image sensor. Optical zoom (zoom lens) DSCs, according to the notifying Parties, offer single lens performance that is very

close to the use of interchangeable lenses and therefore blur the distinction between Compact DSCs and digital SLRs.

181. The Parties submit that the product market includes all DSCs since different models fall along a general spectrum of price and performance characteristics. The notifying Parties submit that the precise market definition can be left open since it does not lead to any competition concerns.

#### ODM Market

182. DSCs branded suppliers often have Original Design Manufacturer (ODM) relationships with manufacturers for DSCs. ODM refers to the design and manufacture of finished products for branded suppliers. ODM suppliers typically specialise in low cost assembly processes. Also common in the market of DSCs are Electronic Manufacturing Services (EMS) which entails the supply of subsystems, components and sometimes devices but not their design. The Parties submit that the relevant product market includes (i) both ODM and EMS activities since both types of suppliers perform the same range of services and the blurring borders of these two activities<sup>84</sup> and (ii) both DSC and other types of digital imaging devices and related consumer electronic products because ODM/EMS manufacturers have the manufacturing processes and know how to readily switch between DSCs and other products such as camcorders, cell phone cameras etc.
183. In this case, the precise product market definition can be left open since irrespective of the precise upstream product market definition the concentration does not raise competition problems.

#### *Relevant geographic market*

#### DSCs Market

184. The Parties submit that the geographic market for DSCs is the EEA since DSCs sold through the EEA are essentially identical with the same leading brands present in all Member States. The Commission has concluded that the precise scope of the geographic market can be left open since the transaction does not create competition concerns in either an EEA wide or national wide geographic market.

#### ODM Market

185. The Parties consider that the relevant geographic market for ODM/EMS supplies is worldwide. This is because the branded suppliers who purchase ODM products are usually based outside Europe and contract negotiations and purchasing decisions are made centrally. Whether the scope of the geographic market of the upstream market is EEA wide or worldwide can be left open since the transaction does not lead to competitive problems under any of the two alternative geographic definitions.

#### *Competitive assessment*

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<sup>84</sup> See also Case No COMP/M/3911 – BenQ/Siemens Mobile, para 9.

## *Horizontal effect*

### DSCs Market

186. In the DSCs market, the transaction leads to three horizontally affected national markets, in the Czech Republic, France and Romania. However, Sanyo's presence is minimal in all three markets since it has market share of [0-5%], [0-5%] and [0-5%] respectively. Furthermore, Panasonic has market shares of less than [20-30%] in all three Member States and faces strong competition from companies likely Canon, Nikon and Sony.
187. In an EEA wide geographic definition, the merged entity would only be the fourth largest player with market share of [10-20%]. In these circumstances, competition concerns can be excluded.

### ODM Market

188. Sanyo is active in the ODM market for DSCs and does not supply EMS services. Its market share for ODM sales of DSCs (in value) is [20-30%] in the EEA and [20-30%] worldwide. Panasonic supplies DSCs only to one customer, [...]. However, even if this activity is considered as an ODM relationship, Panasonic's activities in the ODM sector of DSCs are negligible. Panasonic's share in the EEA is significantly lower than [0-5%]. Furthermore, there are a significant number of competitors such as Altek, Ability Enterprise and Hon Hai that will be able to exert a significant competitive constraint on the merged entity.
189. Therefore, the merger is unlikely to lead to any horizontal anticompetitive effects.

## *Vertical effect*

190. During the market investigation some ODM customers (i.e. companies that are active in the downstream market as branded suppliers of DSC) raised concerns about the merger since Sanyo is one of their main ODM suppliers of DSCs. Their concern is that, following the concentration, they might encounter difficulties in their sourcing of ODMs from Sanyo (i.e. a risk of input foreclosure).<sup>85</sup>
191. The Commission does not consider that an input foreclosure strategy is likely for the following reasons.
192. First, it is unlikely that the merged entity would have the ability to increase prices for the DSCs currently manufactured by Sanyo on an ODM basis. The merged entity would face significant competition in the upstream market. The market share of Sanyo (and of the merged entity) is [<20%] in both an EEA and worldwide market. ODM players such as Altek, Ability Enterprise, Hon Hai and Flextronics exert strong competitive pressure for ODMs. Furthermore, branded suppliers have all the necessary know-how to also produce in house DSCs, which constrain the ability of the merged entity to increase prices post merger. Typically, branded suppliers use in-house production capacity for the manufacturing of high end products. Moreover, ODM

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<sup>85</sup> For the sake of clarity it should be noted that there is no vertical relationship between the merging Parties in the ODM supply of DSCs.

customers usually invite bids and multisource their supplies. These practices reduce the bargaining power of ODM suppliers and constrain their ability to raise prices.

193. Second, several very strong competitors are present in the downstream market and it would be difficult for the merged entity to gain market shares in the downstream market. DSC brands such as Nikon, Sony, Olympus and Canon are able to exert a strong competitive constraint. In the EEA, the merged entity only has a combined market share of [10-20%]. Therefore the merged entity would have no incentive to enter into such a foreclosure strategy since it is very unlikely that it would be able to recoup its lost sales upstream with additional sales downstream.
194. In view of these elements, the Commission considers that the merged entity would have neither the ability nor the incentive to foreclose branded DSC suppliers.

### *Conclusion*

195. Therefore, the Commission has concluded that the concentration would not lead to any serious doubts as regards the horizontal or vertical relationships in the markets for DSCs.

## **7 Other consumer products**

196. In addition to the consumer electronic products discussed above, the proposed transaction would also give rise to certain affected markets in a limited number of additional products if the scope of the relevant geographic market is considered to be no broader than national in scope.<sup>86</sup> These products and market shares of the merged entity in the relevant Member States are: voice recorders<sup>87</sup> in Italy ([10-20%]); DVD player-recorders<sup>88</sup> in the Czech Republic ([20-30%]) Slovakia ([10-20%]) and the United Kingdom ([20-30%]); and home audio systems<sup>89</sup> in the Czech Republic ([10-20%]), Hungary ([10-20%]), Poland ([10-20%]) and Slovakia ([10-20%]).
197. In each case, the increment in market share arising from the proposed transaction is minimal at less than [0-5%] and as such the operation would not have a significant effect even if the product markets under discussion were to be further segmented. Furthermore, the merged entity always faces strong competitors in all these markets.

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<sup>86</sup> It is recalled that the Parties submit that the scope of the relevant geographic market for all consumer electronic products at issue in the present case is EEA-wide (with the possible exception of a distinct market for microwave ovens in the United Kingdom). On the basis of an EEA-wide market, the proposed transaction would not result in an affected market for voice recorders, DVD player-recorders or home audio systems as the market share of the merged entity would not exceed 15%.

<sup>87</sup> Voice recorders are devices used to record speech for later playback and transcription.

<sup>88</sup> DVD player-recorders are devices that write and replay A/V signals on optical disks.

<sup>89</sup> Home audio systems are "one-box solutions" for the home that typically include a DVD or CD player, radio tuner, amplifier and speakers.



198. Moreover, the market shares of the merged entity would remain below 25% and therefore unlikely to raise competition concerns.<sup>90</sup>
199. Considering these elements and the fact that no concerns have been expressed with regard to these products during the course of the market investigation, it is concluded that the proposed transaction does not raise serious doubts in the markets of voice recorders, DVD player recorders and home audio systems.

### ***Conclusion***

In light of the above, the transaction raises serious doubts as to its compatibility with the common market with regard to three different product markets i.e. (i) market for CR-CLBs, (ii) rechargeable coins and (iii) portable NiMH batteries.

## **VI. COMMITMENTS SUBMITTED BY THE NOTIFYING PARTY**

### **(a) Procedure**

200. In order to render the concentration compatible with the common market, the Parties have offered commitments pursuant to Article 6(2) of the EC Merger Regulation, which are annexed to this Decision. A first commitment package was proposed by the Parties on 16 September 2009. After examination and market testing of this commitment package, the Parties amended the latter and submitted on 28 September 2009 its final Commitments, which were deemed suitable to remedy the competition concerns identified. These commitments are attached to this decision and form an integral part thereof.

### **(b) Description of the revised commitments**

201. To address the competition concerns identified with regard to the two first markets, i.e. CR-CLB and rechargeable coin-shaped batteries, the Parties commit to divest Sanyo's Tottori factory (entire share capital of Sanyo Energy Tottori Co.) located in Iwami-cho, Tottori Prefecture, Japan, which produces all Sanyo's CLBs and rechargeable coin-shaped batteries (hereafter, Sanyo Tottori Divestment Business).
202. As regard the market for NiMH, the Parties commit to alternatively either divest the shares of Sanyo Energy Twicell Co., Ltd. and related assets and personnel ("Sanyo NiMH Divestment Business Alternative") or the tangible and intangible assets and personnel relating to Panasonic's Wuxi facility ("Panasonic NiMH Divestment Business Alternative").

#### *Sanyo's Tottori Divestment Business for CLBs and rechargeable coin-shaped batteries*

203. The proposed remedy involves the divestment of Sanyo's entire Tottori plant which is Sanyo's sole manufacturing facility for CLBs and rechargeable coin-shaped batteries. The proposed divestiture includes all tangible and intangible assets in relation to the operation of the Tottori plant.

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<sup>90</sup> See also "Guidelines on the assessment of horizontal mergers under the Council Regulation on the control of concentrations between undertakings", OJ C 31, 5.2.2004, paragraph 18.

204. The Tottori plant has three factory buildings: Factory No.1 houses the [...]. This includes [...] production lines and [...] battery lines. Factories No. 2 and No.3 [...]. As the divestment includes the entire Tottori plant, the Parties propose to enter into a supply agreement with the purchaser for the supply of NiCd electrodes. The turnover deriving from this business activity is very limited compared to the turnover of CLBs and rechargeable coin-shaped batteries of the Sanyo Tottori Divestment Business (approximately [0-5%]).
205. The relevant intellectual property rights (assignment of patents, licences and know-how) are incorporated in the divestment. Also, the divestment includes all personnel currently working at the Tottori plant. In addition, the divestment includes a certain number of personnel that are not currently working at the Tottori plant: i) marketing and sales personnel from [...] ii) certain sales and marketing personnel working in [...] iii) certain R&D personnel.

*NiMH Divestment business*

206. The *Sanyo NiMH Divestment Business Alternative* as operated to date consists formally of the entire share capital of the Sanyo Energy Twicell Co., Ltd., a wholly-owned subsidiary of Sanyo. The proposed divestiture includes all tangible and intangible assets currently used for the production of Sanyo's NiMH portable batteries
207. It includes the Takasaki portable NiMH battery manufacturing facility, located in Takasaki, Japan. The divestment also includes the NiMH business at Sanyo's only other NiMH production facility located in Suzhou, China.<sup>91</sup> This ensures that the Purchaser would have the full range of NiMH batteries as Sanyo's Sub-C and D NiMH are exclusively produced in Suzhou. Therefore all Sanyo's NiMH production facilities are included in the divestiture.<sup>92</sup>
208. The divestment also comprises the relevant intellectual property rights (assignment of patents, licences and know-how). Concerning personnel, the divestiture includes [...] working at Takasaki and at the Sub-C and D NiMH production lines at Suzhou. Additional personnel includes i) marketing and sales personnel currently working in [...] ii) certain sales and marketing personnel working in [...] iii) certain research and development personnel involved in basic materials research on anodes and cathodes carried out at Sanyo's Kobe R&D centre.
209. The divestment also includes, at the option of the purchaser, a supply agreement at cost for sintered cathode from Sanyo's Sumoto plant.

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<sup>91</sup> In 2008 the Suzhou plant produced [...] Sub-C and D cells compared to [...] A, AA and AAA NiMH cells produced at Takasaki. This shows that Suzhou's importance relative to Takasaki in terms of production is relatively limited. In addition to these two NiMH production lines, the Suzhou plant also contains [...] lines for NiCD which would stay with the merged entity. As a result, the NiMH production assets would have to be separated from the Parties' retained business.

<sup>92</sup> At the request of the Purchaser and following a report from the Trustee, the Commission may approve the sale of the Sanyo NiMH Divestment Business without the transfer of the sub C and D production assets in Suzhou, provided that appropriate arrangements are put in place in order to ensure the supply of these battery sizes to the Purchaser, if this does not affect the viability and competitiveness of the Sanyo NiMH Divestment Business after the sale, taking account of the proposed Purchaser.

210. The *Panasonic NiMH Divestment Business Alternative* as operated to date includes the assets located in Wuxi, China that are utilized by Panasonic for the production of portable NiMH batteries. The proposed divestment includes all tangible and intangible assets currently used for the production of Panasonic's NiMH portable batteries
211. Wuxi is Panasonic's sole production facility of portable NiMH batteries, which manufactures the full range of portable NiMH battery sizes.
212. The divestment includes the relevant intellectual property rights (assignment of patents, licences and know-how). It also includes all personnel working at the Wuxi facility in relation to portable NiMH batteries. It also includes i) certain sales and marketing personnel working in [...] and the [...] and ii) certain R&D personnel involved in basic NiMH R&D working in [...].

## VII. ASSESSMENT OF THE PROPOSED REMEDIES

### *Introduction*

213. As set out in the Commission Notice on Remedies, the Commission assesses the compatibility of a notified concentration with the common market in line with the terms of the EC Merger Regulation. Where a concentration raises serious doubts which could lead to a significant impediment to effective competition, the Parties may seek to modify the concentration so as to resolve the serious doubts identified by the Commission with a view to having the merger cleared. In assessing whether or not the remedy will restore effective competition, the Commission considers the type, scale and scope of the remedies by reference to the structure and the particular characteristics of the market in which these serious doubts arise.
214. As concerns the different types of remedy, the most effective way to maintain effective competition is to create the conditions for the emergence of a new competitive entity or for the strengthening of existing competitors via divestiture by the merging Parties. The divested activities must consist of a viable business, which if operated by a suitable purchaser, can compete effectively with the merged entity on a lasting basis and which is divested as a going concern.
215. The Commission's assessment has concluded that the proposed remedy package as submitted by the Parties on 28 September 2009 addresses all serious doubts identified during the course of the procedure and adequately deals with concerns identified by market participants in response to the remedy package. As such, the Commission has concluded that the proposed remedy package is effective in removing the serious doubts brought about by the transaction in the relevant markets.

### *Suitability to remove the serious doubts raised with regards to the -CLB and rechargeable coin-shaped battery markets*

216. The divestment of the Tottori plant proposed by the Parties to address the competition concerns identified with regard to the market for CR-CLB and rechargeable coin-shaped batteries constitutes Sanyo's sole manufacturing facility for both CLBs<sup>93</sup> and

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<sup>93</sup> CR CLB batteries, the only sub chemistry of CLB that Sanyo is currently producing.

rechargeable coin-shaped batteries. Therefore, the proposed divestment will eliminate the entire overlap between the Parties in the manufacture and sale of CLBs<sup>94</sup> and rechargeable coin-shaped batteries in the EEA and worldwide.

217. In 2008, the Sanyo Tottori Divestment Business generated a turnover of approximately EUR [...] million from the sale of CR-CLBs, which represents [20-30%] of the total sales of CR-CLB worldwide. In the EEA, Sanyo has an even higher market share of [30-40%]. Sanyo is the largest CR-CLB supplier in the EEA and the second largest worldwide.
218. Similarly in rechargeable coin-shaped batteries Sanyo has a very strong presence in the market. The Sanyo Tottori Divestment Business in 2008 generated a turnover of approximately EUR [...] million which represents [20-30%] of the worldwide market of rechargeable coin-shaped batteries.
219. Accordingly, the potential purchaser of the Sanyo Tottori Divestment Business will become a sizeable supplier of both CR-CLB and rechargeable coin-shaped batteries.
220. The market test provided positive feedback on the proposed Sanyo Tottori Divestment Business. Respondents also considered that the proposed divestment in principle includes all the tangible and intangible assets necessary to successfully run the business and to enable a potential purchaser to become a viable competitor in these markets, able to effectively compete against the merged entity. Some respondents highlighted that the transfer of sale, marketing and R&D personnel as well as patents that are predominantly used in the production process are essential to successfully run the divested business. The divestment as modified by the Parties on 28 September 2009 has been improved in this respect. In particular, instead of a royalty-free licence of patents as originally foreseen by the Parties, all patents predominantly used in the divestment business will be transferred to the Purchaser. Moreover the scope of any licence back of patents from the Purchaser to the Parties will be limited to applications other than CLB and rechargeable coin-shaped batteries. In addition, the provisions for the transfer of sales, marketing and R&D personnel have been reinforced. The modified commitments thereby ensure the competitiveness of the divestment business.
221. The market investigation indicated that the Sanyo Tottori Divestment Business is likely to attract the interest of several buyers. Indeed, several respondents to the market investigation have expressed an interest in purchasing the Sanyo Tottori Divestment Business. In this respect, a majority of respondents indicated that the suitable Purchaser should have technical know-how and experience of the battery business and that an existing battery manufacturer would be best-placed to compete effectively with the merged entity.
222. In light of the above, the Commission considers the Sanyo Tottori Divestment Business as a suitable commitment to remedy the competition concerns identified with regard to the market for CL-CLB and rechargeable coin-shaped batteries.

*Suitability to remove the serious doubts raised with regards to the portable rechargeable NiMH batteries markets*

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<sup>94</sup> Irrespective of whether the product market definition includes only CR or both CR and BR-CLBs, given that Sanyo is only active in the production and sale of CR-CLBs.

223. Each of the proposed divestment alternatives for portable NiMH batteries is suitable to eliminate the serious doubts identified. Therefore, the Commission has accepted in this specific case both proposed remedies as alternatives.
224. Both Sanyo's and Panasonic's NiMH Divestment Business Alternatives include all the production facilities of the Parties in relation to their portable NiMH businesses.<sup>95</sup> Therefore, both Divestment Business Alternatives will eliminate the entire overlap between the Parties in the manufacture and sale of NiMH in the EEA and worldwide. Furthermore, Sanyo and Panasonic are strong market players in both the EEA and worldwide. In 2008, the Sanyo NiMH Divestment Business Alternative generated turnover of approximately EUR [...] million whilst the Panasonic NiMH Divestment Business Alternative generated turnover of approximately EUR [...] million. Accordingly, the acquisition of either NiMH Divestment Business Alternative will allow the potential purchaser to become a sizeable supplier of portable NiMH batteries.
225. The market investigation has broadly confirmed that the tangible and intangible assets necessary for a stand-alone viable business are included in both divestment alternatives. However, some concerns were expressed concerning the necessary personnel and intellectual property rights. The Divestment Alternatives as modified by the Parties on 28 September 2009 have been improved in this respect. In particular, instead of a royalty-free licence of patents as originally foreseen by the Parties, all patents predominantly used in the divestment business will be transferred to the Purchaser. Moreover the scope of any licence back of patents from the Purchaser to the Parties will be limited to applications other than portable NiMH batteries.<sup>96</sup> In addition, the provisions for the transfer of sales, marketing and R&D personnel have been reinforced. The modified commitments thereby ensure the competitiveness of the divestment business.
226. Furthermore, during the market investigation several potential buyers have shown interest in both alternatives.
227. Based on the above, the Commission has concluded that both NiMH Divestment Business Alternatives are appropriate to remedy the serious doubts identified in portable NiMH batteries. As noted in the commitments the Parties commit to ring-fence both Divestment Alternatives until such time as the closing of one of the divestments on terms approved by the Commission takes place.

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<sup>95</sup> As noted above, at the request of the Purchaser and following a report from the Trustee, the Commission may approve the sale of the Sanyo NiMH Divestment Business without the transfer of the sub C and D production assets in Suzhou, provided that appropriate arrangements are put in place in order to ensure the supply of these battery sizes to the Purchaser, if this does not affect the viability and competitiveness of the Sanyo NiMH Divestment Business after the sale, taking account of the proposed Purchaser.

<sup>96</sup> This restriction will also apply to portable NiMH batteries sold under Sanyo's or Panasonic's respective brand names in the retail channel for a period not exceeding [...] (at the option of the purchaser) where a transitional supply agreement between the merged entity and the Purchaser for these kinds of batteries is in place. This measure is intended to strengthen the viability of the respective NiMH Divestment Business Alternatives.

## VIII. CONDITIONS AND OBLIGATIONS

228. Under the first sentence of the second subparagraph of Article 6(2) of the EC Merger Regulation, the Commission may attach to its decision conditions and obligations intended to ensure that the undertakings concerned comply with the commitments they have entered into vis-à-vis the Commission with a view to rendering the concentration compatible with the common market.
229. The achievement of the measure that gives rise to the structural change of the market is a condition, whereas the implementing steps which are necessary to achieve this result are generally obligations on the Parties. Where a condition is not fulfilled, the Commission's decision declaring the concentration compatible with the common market no longer stands. Where the undertakings concerned commit a breach of an obligation, the Commission may revoke the clearance decision in accordance with Article 8(5) of the EC Merger Regulation. The undertakings concerned may also be subject to fines and periodic penalty payments under Articles 14(2) and 15(1) of the EC Merger Regulation.
230. In accordance with the basic distinction described above, the decision in this case is conditional on the full compliance with Section B of the Commitments. The remaining requirements set out in the other Sections of the Commitments [C, D and E] are considered to constitute obligations.

## IX. CONCLUSION

231. For the above reasons, the Commission has decided not to oppose the notified operation as modified by the commitments submitted by the Parties and to declare it compatible with the common market and with the EEA Agreement pursuant to Article 2(2) of the Council Regulation (EC) No 139/2004, subject to full compliance with the conditions in Section B of the Commitments annexed to the present decision and with the obligations contained in the other sections of the said commitments.
232. This decision is adopted in application of Article 6(1)(b) in connection with Article 6(2) of Council Regulation (EC) No 139/2004.

For the Commission,  
(signed)  
Neelie KROES  
Member of the Commission

**By hand and by fax: 00 32 2 296 4301**

European Commission – Merger Task Force

DG Competition

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## **Case No. COMP/M.5421 – Panasonic/Sanyo**

### **COMMITMENTS TO THE EUROPEAN COMMISSION**

Pursuant to Article 6(2) of Council Regulation (EEC) No. 4064/89 as amended (the “**Merger Regulation**”), Panasonic Corporation (“**Panasonic**”) and Sanyo Electric Co., Ltd. (“**Sanyo**”) (together, the “**Parties**”) hereby provide the following commitments (the “**Commitments**”) in order to enable the European Commission (the “**Commission**”) to declare the acquisition by Panasonic of sole control of Sanyo (the “**Proposed Concentration**”) compatible with the common market and the EEA Agreement by its decision pursuant to Article 6(1)(b) of the Merger Regulation (the “**Decision**”).

The Commitments shall take effect upon the date of adoption of the Decision.

This text shall be interpreted in the light of the Decision to the extent that the Commitments are attached as conditions and obligations, in the general framework of Community law, in particular in the light of the Merger Regulation, and by reference to the Commission Notice on remedies acceptable under Council Regulation (EEC) No 4064/89 and under Commission Regulation (EC) No 447/98.

#### **Section A. Definitions**

For the purpose of the Commitments, the following terms shall have the following meaning:

**Affiliated Undertakings:** undertakings controlled by the Parties and/or by the ultimate parents of the Parties, whereby the notion of control shall be interpreted pursuant to Article 3 Merger Regulation and in the light of the Commission Notice on the concept of concentration under Council Regulation (EEC) No 4064/89.

**Closing:** the transfer of the legal title of the Divestment Businesses to the Purchaser(s).

**Divestment Businesses:** the assets comprising the businesses, as defined in Section B and the attached Schedules, that the Parties commit to divest (each respective business defined in the Schedules herein referred to as a “*Divestment Business*”).

**Divestiture Trustee:** one or more natural or legal person(s), independent from the Parties, who is approved by the Commission and appointed by both of the Parties and who has

received from both of the Parties the exclusive Trustee Mandate to sell one or more of the Divestment Businesses to a Purchaser at no minimum price.

**Effective Date:** the date of adoption of the Decision.

**First Divestiture Period:** the period of [...] from the Effective Date.

**Hold Separate Manager:** the person(s) appointed by one or both of the Parties for each Divestment Business to manage the day-to-day business under the supervision of the Monitoring Trustee.

**Key Personnel:** all personnel necessary to maintain the viability and competitiveness of the Divestment Business, as listed in the applicable Schedules.

**Monitoring Trustee:** one or more natural or legal person(s), independent from the Parties, who is approved by the Commission and appointed by both of the Parties, and who has the duty to monitor the Parties' compliance with the conditions and obligations attached to the Decision.

**Panasonic:** Panasonic Corporation, incorporated under the laws of Japan, with its registered office at 1006, Kadoma, Kadoma City, Osaka 571-8501, Japan, and registered with the Commercial Register maintained by the Moriguchi Branch Office of the Osaka Legal Affairs Bureau.

**Personnel:** all personnel currently employed by the Divestment Businesses, including Key Personnel, staff seconded to the Divestment Businesses, shared personnel and the additional personnel listed in the applicable Schedules.

**Purchaser:** with regard to each Divestment Business, the entity approved by the Commission as acquirer of the Divestment Business in accordance with the criteria set out in Section D.

**Sanyo:** Sanyo Electric Co., Ltd., incorporated under the laws of Japan, with its registered office at 5-5 Keihan-Hondori 2-chome, Moriguchi City, Osaka 570-8677, Japan, and registered with the Commercial Register maintained by the Moriguchi Branch Office of the Osaka Legal Affairs Bureau.

**Trustee(s):** the Monitoring Trustee and the Divestiture Trustee.

**Trustee Divestiture Period:** the period of [...] from the end of the First Divestiture Period.

## **Section B. The Divestment Businesses**

### Commitment to divest

1. In order to restore effective competition, the Parties commit to divest, or to procure the divestiture of, the Divestment Businesses as going concerns to one or more Purchasers and on terms of sale approved by the Commission in accordance with the procedure described in paragraph 18 by the end of the Trustee Divestiture Period (the "***Divestiture Commitment***"). To carry out the divestiture, the Parties commit to find one or more Purchasers and to enter into one or more final binding sale and purchase agreement(s) for the sale of the Divestment



Businesses within the First Divestiture Period. If the Parties have not entered into such an agreement(s) at the end of the First Divestiture Period, the Parties shall grant the Divestiture Trustee an exclusive mandate to sell the Divestment Businesses in accordance with the procedure described in paragraph 27 in the Trustee Divestiture Period.

2. The Parties shall be deemed to have complied with this commitment if, (i) by the end of the Trustee Divestiture Period, the Parties have entered into a final binding sale and purchase agreement for each Divestment Business; (ii) the Commission approves the Purchaser(s) and the terms in accordance with the procedure described in paragraph 18; and (iii) the Closing of the sale of the Divestment Business takes place in each case within a period [...] after the approval of the respective Purchaser and the terms of sale by the Commission.
3. In order to maintain the structural effect of the Commitments, the Parties shall, for a period of ten (10) years after the Effective Date, not acquire direct or indirect influence over the whole or part of the Divestment Businesses, unless the Commission has previously found that the structure of the market has changed to such an extent that the absence of influence over the Divestment Business in question is no longer necessary to render the proposed concentration compatible with the common market.

#### Structure and definition of the Divestment Business

4. The Divestment Businesses consists of the following:
  - (a) Either of two alternatives for the portable nickel metal hydride business (the “**NiMH Divestment Business**”): the Parties have the option to seek the divestiture of (i) the shares of Sanyo Energy Twicell Co., Ltd. and related assets and Personnel, as specified below, (the “**Sanyo NiMH Divestment Business Alternative**”) or (ii) the tangible and intangible assets and Personnel relating to Panasonic’s Wuxi facility, as specified below (the “**Panasonic NiMH Divestment Business Alternative**”). The Parties will confirm, at any time prior to the end of the First Divestiture Period, which of the Sanyo NiMH Divestment Business Alternative or the Panasonic NiMH Divestment Business Alternative will be divested and shall notify any selection in writing to the Commission and the Monitoring Trustee. For the avoidance of doubt, the Parties shall have the option throughout the First Divestiture Period to switch between both alternatives, until the Commission has approved one of the alternatives. Similarly, the Divestiture Trustee shall have the option during the Trustee Divestiture Period to switch between both alternatives;
  - (b) The shares of Sanyo Energy Tottori Co., Ltd., which owns all of Sanyo’s production facilities at Tottori, including the factory that produces and sells all of Sanyo’s cylindrical lithium manganese dioxide batteries (“CLB”) and coin-shaped rechargeable lithium batteries (“Rechargeable Coins”), including related assets and personnel, as specified below, (the “**Sanyo Tottori Divestment Business**”).

each time as further defined in the relevant Schedule.

These businesses will be divested to one or more Purchaser(s).

5. The present legal and functional structure of the NiMH Divestment Business as operated to date is described in Schedule 1. The NiMH Divestment Business, described in more detail in Schedule 1, includes:
- (a) all tangible and intangible assets (including the relevant intellectual property rights), by way of transfer, sale, assignment or license, which contribute to the current operation or are necessary to ensure the viability and competitiveness of the NiMH Divestment Business, as detailed in Schedule 1;
  - (b) all licences, permits and authorisations issued by any governmental organisation for the benefit of the NiMH Divestment Business;
  - (c) all rights and obligations under all contracts, leases, commitments and customer orders of the NiMH Divestment Business, and all customer, credit and other records of the NiMH Divestment Business;
- (items referred to under (a)-(c) hereinafter collectively referred to as “*Assets*”);
- (d) the Personnel, as further described in Schedule 1; and
  - (e) the benefit, for a transitional period of [...] after Closing and on terms and conditions equivalent to those at present afforded to the NiMH Divestment Business, of all current arrangements under which the Parties or Affiliated Undertakings supply products or services to the NiMH Divestment Business, as detailed in Schedule 1, unless otherwise agreed with the Purchaser.
6. The present legal and functional structure of the Sanyo Tottori Divestment Business as operated to date is described in Schedule 2. The Sanyo Tottori Divestment Business, described in more detail in Schedule 2, includes:
- (a) all tangible and intangible assets (including the relevant intellectual property rights), by way of transfer, sale, assignment or license, which contribute to the current operation or are necessary to ensure the viability and competitiveness of the Sanyo Tottori Divestment Business, as detailed in Schedule 2;
  - (b) all licences, permits and authorisations issued by any governmental organisation for the benefit of the Sanyo Tottori Divestment Business;
  - (c) all rights and obligations under all contracts, leases, commitments and customer orders of the Sanyo Tottori Divestment Business, and all customer, credit and other records of the Sanyo Tottori Divestment Business, it being understood that with respect to the nickel cadmium (“NiCd”) activities at Tottori only those rights, obligations and records will be transferred as are required for the Purchaser to be able to conduct toll-manufacturing on behalf of Sanyo;
- (items referred to under (a)-(c) hereinafter collectively referred to as “*Assets*”);
- (d) the Personnel, as further described in Schedule 2; and
  - (e) the benefit, for a transitional period of [...] after closing and on terms and conditions equivalent to those at present afforded to the Sanyo Tottori Divestment Business, of

all current arrangements under which the Parties or Affiliated Undertakings supply products or services to the **Sanyo Tottori** Divestment Business, as detailed in Schedule 2, unless otherwise agreed with the Purchaser.

7. For the avoidance of doubt, the Divestment Businesses shall not include:
  - (a) the Panasonic or Sanyo (including Eneloop) names, tradenames, and logos in any form;
  - (b) the books and records required to be retained pursuant to any statute, rule, regulation or ordinance, provided that copies of such documents necessary for each Divestment Business shall be provided to the Purchaser, upon request;
  - (c) general books of account and books of original entry that comprise the Parties' or an Affiliated Undertaking's permanent accounting or tax records, provided that copies of such documents necessary for each Divestment Business shall be provided to the Purchaser, upon request; and
  - (d) intellectual property rights that do not contribute to the current operation of the Divestment Business.

## **Section C. Related commitments**

### Preservation of Viability, Marketability and Competitiveness

8. From the Effective Date until Closing, the Parties shall preserve the economic viability, marketability and competitiveness of each Divestment Business, in accordance with good business practice, and shall minimise as far as possible any risk of loss of competitive potential of each Divestment Business. In particular the Parties undertake:
  - (a) not to carry out any act upon their own authority that might have a significant adverse impact on the value, management or competitiveness of the Divestment Businesses or that might alter the nature and scope of activity, or the industrial or commercial strategy or the investment policy of the Divestment Businesses;
  - (b) to make available sufficient resources for the development of the Divestment Businesses, on the basis and continuation of the existing business plans; and
  - (c) to take all reasonable steps, including appropriate incentive schemes (based on industry practice), to encourage all Key Personnel to remain with the Divestment Businesses.

### Hold-separate obligations of Parties

9. The Parties commit, from the Effective Date until Closing and subject to paragraph 8 to (i) keep the Divestment Businesses separate from the businesses they are retaining; (ii) ensure that Key Personnel of each Divestment Business – including the Hold Separate Manager – have no involvement in any business retained and vice versa; and (iii) ensure that the Personnel do not report to any individual outside the Divestment Business.

10. Until Closing, the Parties shall assist the Monitoring Trustee in ensuring that each Divestment Business is managed as a distinct and saleable entity or group of assets separate from the businesses retained by the Parties. The Parties shall appoint (a) Hold Separate Manager(s) who shall be responsible for the management of the Divestment Businesses, under the supervision of the Monitoring Trustee. The Hold Separate Manager(s) shall manage the Divestment Businesses independently and in the best interest of the businesses with a view to ensuring their continued economic viability, marketability and competitiveness and their independence from the businesses retained by the Parties.

#### Ring-fencing

11. The Parties shall implement all necessary measures to ensure that they do not after the Effective Date obtain any business secrets, know-how, commercial information, or any other information of a confidential or proprietary nature relating to the Divestment Businesses. The Parties may obtain information relating to the Divestment Businesses that are reasonably necessary for the divestiture of a Divestment Business or whose disclosure to the Parties is required by law.
12. The participation of the Divestment Businesses in a Party's central information technology network shall be severed to the extent possible, without compromising the viability of the Divestment Businesses.

#### Non-solicitation clause

13. The Parties undertake, subject to customary limitations, not to solicit, and to procure that Affiliated Undertakings do not solicit, the Key Personnel transferred with any Divestment Businesses for a period of [...] after Closing.

#### Due Diligence

14. In order to enable potential purchasers to carry out a reasonable due diligence of the Divestment Businesses, the Parties shall, subject to customary confidentiality assurances and dependent on the stage of the divestiture process:
  - (a) provide to potential purchasers sufficient information as regards the Divestment Businesses;
  - (b) provide to potential purchasers sufficient information relating to the Personnel and allow them reasonable access to the Personnel, if applicable.

#### Reporting

15. The Parties shall submit written reports in English to the Commission and the Monitoring Trustee on potential purchasers of the Divestment Businesses and developments in the negotiations with such potential purchasers to the Commission and the Monitoring Trustee no later than 10 days after the end of every month following the Effective Date (or otherwise at the Commission's request).
16. The Parties shall inform the Commission and the Monitoring Trustee on the preparation of the data room documentation and the due diligence procedure and shall submit a copy of an

information memorandum to the Commission and the Monitoring Trustee before sending the memorandum out to potential purchasers.

#### **Section D. The Purchaser**

17. In order to ensure the immediate restoration of effective competition, the Purchaser of a Divestment Business, in order to be approved by the Commission, must:
- (a) be independent of and unconnected to the Parties;
  - (b) have the financial resources, proven expertise and incentive to maintain and develop the Divestment Business as a viable and active competitive force in competition with the Parties and other competitors;
  - (c) neither be likely to create, in the light of the information available to the Commission, *prima facie* competition concerns nor give rise to a risk that the implementation of the Commitments will be delayed, and must, in particular, reasonably be expected to obtain all necessary approvals from the relevant regulatory authorities for the acquisition of the Divestment Business

(the before-mentioned criteria for the purchaser hereafter the “***Purchaser Requirements***”).

18. The final binding sale and purchase agreement(s) shall be conditional on the Commission’s approval. When the Parties have reached an agreement with a Purchaser, they shall submit a fully documented and reasoned proposal, including a copy of the final agreement(s), to the Commission and the Monitoring Trustee. The Parties must be able to demonstrate to the Commission that the purchaser meets the Purchaser Requirements and that the Divestment Business is being sold in a manner consistent with the Commitments. For the approval, the Commission shall verify that the purchaser fulfils the Purchaser Requirements and that the Divestment Business is being sold in a manner consistent with the Commitments. The Commission may approve the sale of the Divestment Business without one or more Assets or parts of the Personnel, if this does not affect the viability and competitiveness of the Divestment Business after the sale, taking account of the proposed purchaser. In particular, but without excluding other approvals by the Commission, at the request of the Purchaser and after the report of the Trustee, the Commission may approve the sale of the Sanyo NiMH Divestment Business without the transfer of the sub-C and D NiMH production assets in Suzhou, provided that appropriate arrangements are put in place in order to ensure the supply of batteries of the referred sizes to the Purchaser, if this does not affect the viability and competitiveness of the NiMH Divestment Business after the sale, taking account of the proposed Purchaser.

## **Section E. Trustee**

### **I. Appointment Procedure**

19. The Parties shall appoint a Monitoring Trustee to carry out the functions specified in the Commitments for a Monitoring Trustee. If the Parties have not entered into a binding sales and purchase agreement one month before the end of the First Divestiture Period or if the Commission has rejected a purchaser proposed by the Parties at that time or thereafter, the Parties shall appoint a Divestiture Trustee to carry out the functions specified in the Commitments for a Divestiture Trustee. The appointment of the Divestiture Trustee shall take effect upon the commencement of the Trustee Divestiture Period.
20. The Trustee(s) shall be independent of the Parties, shall possess the necessary qualifications to carry out its mandate, for example as an investment bank or consultant or auditor, and shall neither have nor become exposed to a conflict of interest. The Trustee shall be remunerated by the Parties in a way that does not impede the independent and effective fulfilment of its mandate. In particular, where the remuneration package of a Divestiture Trustee includes a success premium linked to the final sale value of the Divestment Business, the fee shall also be linked to a divestiture within the Trustee Divestiture Period.

#### *Proposal by the Parties*

21. No later than one week after the Effective Date, the Parties shall submit a list of one or more persons whom the Parties propose to appoint as the Monitoring Trustee to the Commission for approval. No later than one month before the end of the First Divestiture Period, the Parties shall submit a list of one or more persons whom the Parties propose to appoint as Divestiture Trustee to the Commission for approval. The proposal shall contain sufficient information for the Commission to verify that the proposed Trustee fulfils the requirements set out in paragraph 20 and shall include:
  - (a) the full terms of the proposed mandate, which shall include all provisions necessary to enable the Trustee to fulfil its duties under these Commitments;
  - (b) the outline of a work plan which describes how the Trustee intends to carry out its assigned tasks;
  - (c) an indication whether the proposed Trustee is to act as both Monitoring Trustee and Divestiture Trustee or whether different trustees are proposed for the two functions.

#### *Approval or rejection by the Commission*

22. The Commission shall have the discretion to approve or reject the proposed Trustee(s) and to approve the proposed mandate subject to any modifications it deems necessary for the Trustee to fulfil its obligations. If only one name is approved, the Parties shall appoint or cause to be appointed, the individual or institution concerned as Trustee, in accordance with the mandate approved by the Commission. If more than one name is approved, the Parties shall be free to choose the Trustee to be appointed from among the names approved. The Trustee shall be appointed within one week of the Commission's approval, in accordance with the mandate approved by the Commission.

*New proposal by the Parties*

23. If all the proposed Trustees are rejected, the Parties shall submit the names of at least two more individuals or institutions within one week of being informed of the rejection, in accordance with the requirements and the procedure set out in paragraphs 19 and 22.

*Trustee nominated by the Commission*

24. If all further proposed Trustees are rejected by the Commission, the Commission shall nominate a Trustee, whom the Parties shall appoint, or cause to be appointed, in accordance with a trustee mandate approved by the Commission.

II. Functions of the Trustee

25. The Trustee shall assume its specified duties in order to ensure compliance with the Commitments. The Commission may, on its own initiative or at the request of the Trustee or the Parties, give any orders or instructions to the Trustee in order to ensure compliance with the conditions and obligations attached to the Decision.

*Duties and obligations of the Monitoring Trustee*

26. The Monitoring Trustee shall:
- (a) propose in its first report to the Commission a detailed work plan describing how it intends to monitor compliance with the obligations and conditions attached to the Decision.
  - (b) oversee the on-going management of the Divestment Business with a view to ensuring its continued economic viability, marketability and competitiveness and monitor compliance by the Parties with the conditions and obligations attached to the Decision. To that end the Monitoring Trustee shall:
    - (i) monitor the preservation of the economic viability, marketability and competitiveness of the Divestment Businesses, and the keeping separate of the Divestment Businesses from the business retained by the Parties, in accordance with paragraphs 8 and 9 of the Commitments;
    - (ii) supervise the management of the Divestment Businesses as a distinct and saleable entity, in accordance with paragraph 10 of the Commitments;
    - (iii) in consultation with the Parties, (x) determine all necessary measures to ensure that the Parties do not after the Effective Date obtain any business secrets, know-how, commercial information, or any other information of a confidential or proprietary nature relating to the Divestment Businesses, in particular strive for the severing of the Divestment Businesses' participation in a central information technology network to the extent possible, without compromising the viability of the Divestment Businesses, and (y) decide whether such information may be disclosed to the Parties as the disclosure is reasonably necessary to allow the Parties to carry out the divestiture or as the disclosure is required by law;

- (iv) monitor the splitting of assets and the allocation of Personnel between the Divestment Businesses and the Parties or Affiliated Undertakings;
- (c) assume the other functions assigned to the Monitoring Trustee under the conditions and obligations attached to the Decision;
- (d) propose to the Parties such measures as the Monitoring Trustee considers necessary to ensure the Parties' compliance with the conditions and obligations attached to the Decision, in particular the maintenance of the full economic viability, marketability or competitiveness of the Divestment Businesses, the holding separate of the Divestment Businesses and the non-disclosure of competitively sensitive information;
- (e) review and assess potential purchasers as well as the progress of the divestiture process and verify that, dependent on the stage of the divestiture process, potential purchasers receive sufficient information relating to a Divestment Business and the Personnel in particular by reviewing, if available, the data room documentation, the information memorandum and the due diligence process;
- (f) provide to the Commission, sending the Parties a non-confidential copy at the same time, a written report within 15 days after the end of every month. The report shall cover the operation and management of the Divestment Businesses so that the Commission can assess whether the businesses are held in a manner consistent with the Commitments, and the progress of the divestiture process as well as potential purchasers. In addition to these reports, the Monitoring Trustee shall promptly report in writing to the Commission, sending the Parties a non-confidential copy at the same time, if it concludes on reasonable grounds that the Parties are failing to comply with these Commitments;
- (g) within one week after receipt of the documented proposal referred to in paragraph 18 submit to the Commission a reasoned opinion as to the suitability and independence of the proposed purchaser and the viability of the Divestment Business after the sale and as to whether the Divestment Business is sold in a manner consistent with the conditions and obligations attached to the Decision, in particular, if relevant, whether the sale of the Divestment Business without one or more Assets or not all of the Personnel affects the viability of the Divestment Business after the sale, taking account of the proposed purchaser.

*Duties and obligations of the Divestiture Trustee*

27. Within the Trustee Divestiture Period, the Divestiture Trustee shall sell at no minimum price the Divestment Business to a purchaser, provided that the Commission has approved both the purchaser and the final binding sale and purchase agreement in accordance with the procedure laid down in paragraph 18. The Divestiture Trustee shall include in the sale and purchase agreement such terms and conditions as it considers appropriate for an expedient sale in the Trustee Divestiture Period. In particular, the Divestiture Trustee may include in the sale and purchase agreement such customary representations and warranties and indemnities as are reasonably required to effect the sale. The Divestiture Trustee shall protect the legitimate financial interests of the Parties, subject to the Parties' unconditional obligation to divest at no minimum price in the Trustee Divestiture Period.



28. In the Trustee Divestiture Period (or otherwise at the Commission's request), the Divestiture Trustee shall provide the Commission with a comprehensive monthly report written in English on the progress of the divestiture process. Such reports shall be submitted within fifteen (15) days after the end of every month with a simultaneous copy to the Monitoring Trustee and a non-confidential copy to the Parties.

### III. Duties and obligations of the Parties

29. The Parties shall provide and shall cause its advisors to provide the Trustee with all such cooperation, assistance and information as the Trustee may reasonably require to perform its tasks. The Trustee shall have full and complete access to any of the Parties' or the Divestment Businesses' books, records, documents, management or other personnel, facilities, sites and technical information necessary for fulfilling its duties under the Commitments and the Parties and the Divestment Businesses shall provide the Trustee upon request with copies of any document. The Parties and the Divestment Businesses shall make available to the Trustee one or more offices on their premises and shall be available for meetings in order to provide the Trustee with all information necessary for the performance of its tasks.
30. The Parties shall provide the Monitoring Trustee with all managerial and administrative support that it may reasonably request on behalf of the management of the Divestment Businesses. This shall include all administrative support functions relating to the Divestment Businesses which are currently carried out at headquarters level. The Parties shall provide and shall cause their advisors to provide the Monitoring Trustee, on request, with the information submitted to potential purchasers, in particular give the Monitoring Trustee access to the data room documentation and all other information granted to potential purchasers in the due diligence procedure. The Parties shall inform the Monitoring Trustee on possible purchasers, submit a list of potential purchasers, and keep the Monitoring Trustee informed of all developments in the divestiture process.
31. The Parties shall grant or procure their Affiliated Undertakings to grant comprehensive powers of attorney, duly executed, to the Divestiture Trustee to effect the sale, the Closing and all actions and declarations which the Divestiture Trustee considers necessary or appropriate to achieve a sale and Closing, including the appointment of advisors to assist with the sale process. Upon request of the Divestiture Trustee, the Parties shall cause the documents required for effecting the sale and the Closing to be duly executed.
32. The Parties shall indemnify the Trustee and its employees and agents (each an "***Indemnified Party***") and hold each Indemnified Party harmless against, and hereby agrees that an Indemnified Party shall have no liability to the Parties for any liabilities arising out of the performance of the Trustee's duties under the Commitments, except to the extent that such liabilities result from the wilful default, recklessness, gross negligence or bad faith of the Trustee, its employees, agents or advisors.
33. At the expense of the Parties, the Trustee may appoint advisors (in particular for corporate finance or legal advice), subject to the Parties' approval (this approval not to be unreasonably withheld or delayed) if the Trustee considers the appointment of such advisors necessary or appropriate for the performance of its duties and obligations under the Mandate, provided that any fees and other expenses incurred by the Trustee are reasonable.

Should the Parties refuse to approve the advisors proposed by the Trustee the Commission may approve the appointment of such advisors instead, after having heard the Parties. Only the Trustee shall be entitled to issue instructions to the advisors. Paragraph 32 shall apply mutatis mutandis. In the Trustee Divestiture Period, the Divestiture Trustee may use advisors who served the Parties during the Divestiture Period if the Divestiture Trustee considers this in the best interest of an expedient sale.

#### IV. Replacement, discharge and reappointment of the Trustee

34. If the Trustee ceases to perform its functions under the Commitments or for any other good cause, including the exposure of the Trustee to a conflict of interest:
- (a) the Commission may, after hearing the Trustee, require the Parties to replace the Trustee; or
  - (b) The Parties, with the prior approval of the Commission, may replace the Trustee.
35. If the Trustee is removed according to paragraph 34 the Trustee may be required to continue in its function until a new Trustee is in place to whom the Trustee has effected a full hand over of all relevant information. The new Trustee shall be appointed in accordance with the procedure referred to in paragraphs 19-24.
36. Beside the removal according to paragraph 34 the Trustee shall cease to act as Trustee only after the Commission has discharged it from its duties after all the Commitments with which the Trustee has been entrusted have been implemented. However, the Commission may at any time require the reappointment of the Monitoring Trustee if it subsequently appears that the relevant remedies might not have been fully and properly implemented.

#### **Section F. The Review Clause**

37. The Commission may, where appropriate, in response to a request from the Parties showing good cause and accompanied by a report from the Monitoring Trustee:
- (a) Grant an extension of the time periods foreseen in the Commitments, or
  - (b) Waive, modify or substitute, in exceptional circumstances, one or more of the undertakings in these Commitments.
38. Where the Parties seek an extension of a time period, they shall submit a request to the Commission no later than one (1) month before the expiry of that period, showing good cause. Only in exceptional circumstances shall the Parties be entitled to request an extension within the last month of any period.

duly authorised for and on behalf of

PANASONIC CORPORATION

.....  
By: [...]

Date: 26 September 2009

duly authorised for and on behalf of

SANYO ELECTRIC CO., LTD.

.....  
By: [...]

Date: 28 September 2009

## SCHEDULE 1

### NiMH Divestment Business

1. The Parties commit to procure the divestiture to a Purchaser approved by the Commission of either the Sanyo NiMH Divestment Business Alternative or the Panasonic NiMH Divestment Business Alternative, each of which is defined below.

#### The Sanyo NiMH Divestment Business Alternative

2. The Sanyo NiMH Divestment Business Alternative as operated to date consists formally of the entire share capital of the Sanyo Energy Twicell Co., Ltd., a wholly-owned subsidiary of Sanyo whose registered place of business and place of management is at 307-2, Koyagi-Machi, Takasaki-shi, Gunma Prefecture, Japan.
3. Following paragraph 4 of these Commitments, the Sanyo NiMH Divestment Business Alternative includes, but is not limited to:
  - (a) the following main tangible assets:
    - i. The Takasaki portable nickel metal hydride (“NiMH”) battery manufacturing facility owned and operated by Sanyo located at 307-2, Koyagi-Machi, Takasaki-shi, Gunma prefecture, Japan. Specifically, the assets for this production facility consist of all manufacturing assets at the Takasaki plant for industrial and retail use NiMH batteries, including:
      - [...] assembly lines for NiMH cells of sizes A, AA, and AAA;
      - the portable NiMH entire electrode manufacturing equipment;
      - the portable NiMH inspection and testing equipment;
      - the portable NiMH pack assembly equipment.
    - ii. The Sub-C and D NiMH production assets located in the facility of Sanyo Energy (Suzhou) Co. Ltd, at Suzhou, Jiangsu Province, the People’s Republic of China. At the request of the Purchaser and after the report of the Trustee, the Commission may approve the sale of the Sanyo NiMH Divestment Business without the transfer of the sub C and D NiMH production assets in Suzhou, provided that appropriate arrangements are put in place in order to ensure the supply of batteries of the referred sizes to the Purchaser, if this does not affect the viability and competitiveness of the NiMH Divestment Business after the sale, taking account of the proposed Purchaser.
    - iii. Finished goods inventory and work in process relating exclusively to the Sanyo NiMH Divestment Business Alternative.
  - (b) the following main intangible assets:
    - i. Assignment of all patents held by Sanyo that are predominantly used in the manufacture and sale of the types of portable NiMH batteries currently manufactured or under development by the Sanyo NiMH Divestment Business Alternative, subject to the Parties receiving perpetual, irrevocable,

non-exclusive and royalty-free licenses back for the use of such patents in applications other than portable NiMH batteries. In addition, such license would permit the Parties to sell portable NiMH batteries through the retail channel, in particular under Sanyo's Eneloop brand, pursuant to the supply agreement referred to in 3(j) below, and to manufacture and sell portable NiMH batteries through the retail channel, in particular under Sanyo's Eneloop brand, as from [...]. The patents concerned include in particular (but are not necessarily limited to) the patents attached as Confidential Annex 1-A.

- ii. Sub-licensing of all patents currently licensed by Sanyo (to the extent these may be sub-licensed) that are used in the production and/or sale of the types of portable NiMH batteries that are being divested. Alternatively, Sanyo will exercise best efforts to assist the Purchaser in obtaining additional licenses to such technology from third party right holders.
  - iii. Perpetual, irrevocable, non-exclusive and royalty-free licenses to patents held by Sanyo that are not predominantly used in connection with the Sanyo NiMH Divestment Business Alternative, including but not limited to those that are predominantly used in connection with businesses retained by the Parties (in particular, HEV batteries and NiCd batteries) insofar as required for the manufacture and sale of the types of portable NiMH batteries currently manufactured by the Sanyo NiMH Divestment Business Alternative.
  - iv. Perpetual, irrevocable, non-exclusive and royalty-free licenses to all know-how and recipes needed for the production and/or sale of the types of portable NiMH batteries that are being divested.
- (c) the following main licences, permits and authorisations:
- i. Best efforts to assist the Purchaser with transferring or obtaining the licenses, permits, authorisations needed for the manufacture and sale of the portable NiMH batteries corresponding to the assets acquired by the Purchaser.
- (d) the following main contracts, agreements, leases, commitments and understandings:
- i. Best efforts to assign, novate or transfer all rights and obligations under Sanyo's existing contracts and agreements with customers relating to portable NiMH batteries. A list of the main customers is attached as Confidential Annex 1-B.
  - ii. Best efforts to assign, novate or transfer all relevant third party supply and/or outsourcing agreements that Sanyo currently has in place in relation to the operation of the Sanyo NiMH Divestment Business Alternative. Confidential Annex 1-C contains a list of the main such agreements, in particular as regards [...].
- (e) the following customer, credit and other records:
- i. All customer, credit and related records corresponding to the customer agreements and contracts assigned, novated or transferred pursuant to 3(d)(i)

above.

- (f) the following Personnel (in accordance with applicable Japanese, Chinese and European labour laws and all other relevant legislation):
- i. All personnel currently working at the Takasaki facility;
  - ii. All personnel currently dedicated to the Sub-C and D NiMH production assets and [...] general support staff located at Sanyo's Suzhou facility, subject to the transfer of these production assets as referred to in 3(a)(ii) above;
  - iii. Twelve sales and marketing personnel working in [...] (an unincorporated Sanyo division) as well as [...] sales and marketing personnel working in [...];
  - iv. The [...] research and development personnel involved in basic materials research on anodes and cathodes carried out at Sanyo's [...];
  - v. [...] IT support [...] currently assisting Takasaki out of [...].
- (g) the Key Personnel, including in particular (but not necessarily limited to) the persons listed below (in accordance with applicable Japanese, Chinese and European labour laws and all other relevant legislation):

<b>Key Employee</b>	<b>Function</b>
[...]	President of Sanyo Energy Twicell Co., Ltd.
[...]	Senior Manager General Affairs Division
[...]	Senior Manager at the Business Strategy Division
[...]	Senior Manager at the Quality Control Division
[...]	Senior Manager at the Engineering Division
[...]	Senior Manager at the Technical Marketing Division
[...]	Senior Manager at the System Design Division
[...]	Senior Manager at the Production Division
[...]	Senior Manager at the Business Strategy Division
[...]	Senior Manager at the Technology and R&D Division
[...]	Senior Manager at the Sales and Marketing Division
[...] would be appointed as hold separate manager.	

- (h) the arrangements to supply the Purchaser with the following products or services from Sanyo or Affiliated Undertakings for a transitional period of [...]:

- i. A technical assistance agreement to facilitate a smooth transfer of know-how.
    - ii. A transition services agreement for short-term ancillary services in the areas of information technology, logistics, and other administrative and support functions.
  - (i) The supply at cost of sintered cathodes as may be required by the Purchaser for incorporation into portable NiMH batteries.
  - (j) Transitional arrangements for the Purchaser to supply Sanyo with portable NiMH batteries for resale by Sanyo on a retail basis [...].
4. The Sanyo NiMH Divestment Business Alternative shall NOT include:
- (a) the Sanyo names, tradenames, and logos in any form, including but not limited to “SANYO” and “ENELOOP”;
  - (b) the books and records required to be retained pursuant to any statute, rule, regulation or ordinance, provided that copies of such documents necessary for the Sanyo NiMH Divestment Business Alternative shall be provided to the Purchaser, upon request;
  - (c) general books of account and books of original entry that comprise the Parties’ or an Affiliated Undertaking’s permanent accounting or tax records, provided that copies of such documents necessary for the Sanyo NiMH Divestment Business Alternative shall be provided to the Purchaser, upon request; and
  - (d) intellectual property rights that do not contribute to the current operation of the Sanyo NiMH Divestment Business Alternative.

The Panasonic NiMH Divestment Business Alternative

- 5. The Panasonic NiMH Divestment Business Alternative as operated to date includes the assets located in Wuxi, China that are utilized by Panasonic for the production of portable NiMH batteries.
- 6. Following paragraph 4 of these Commitments, the Panasonic NiMH Divestment Business Alternative includes, but is not limited to:
  - (a) the following main tangible assets:
    - i. The portable NiMH battery production facility and portable NiMH electrode manufacturing facility (collectively “the portable NiMH Plant”) owned and operated by Panasonic located in Buildings A and B at Block 59, Wuxi National Hi & New Tech Industrial Development Zone, Wuxi, Jiangsu Province, the People’s Republic of China. Specifically, the Assets for the portable NiMH Plant consist of:
      - [...] lines for the manufacture of portable NiMH cells ([...] to manufacture size A, [...] to manufacture sizes AA/AAA, [...] to manufacture size C, [...] to manufacture size D, and [...] to manufacture size Sub-C NiMH cells);
      - portable NiMH inspection and testing equipment;

- portable NiMH electrode manufacturing equipment; and
  - portable NiMH pack assembly equipment.
- ii. Finished goods inventory and work in process relating exclusively to the Panasonic NiMH Divestment Business Alternative.
- (b) the following main intangible assets:
- i. Assignment of all patents held by Panasonic that are predominantly used in connection with the manufacture and sale of the types of portable NiMH batteries currently manufactured or under development by the Panasonic NiMH Divestment Business Alternative, subject to the Parties receiving perpetual, irrevocable, non-exclusive, royalty-free licenses back for the use of such patents in applications other than portable NiMH batteries. In addition, such license would permit the Parties to sell portable NiMH batteries through the retail channel, in particular under Panasonic's Evolta, Evoia and Infinium brands, pursuant to the supply agreement referred to in 6(i) below, and to manufacture and sell portable NiMH batteries through the retail channel, in particular under Panasonic's Evolta, Evoia and Infinium brands, as from [...]. The patents concerned include in particular (but are not necessarily limited to) the list of patents that is attached as Confidential Annex P-1.
  - ii. Sub-licensing of all patents currently licensed to Panasonic (to the extent these may be sub-licensed) that are predominantly used in connection with the manufacture and sale of the types of portable NiMH batteries currently manufactured by the Panasonic NiMH Divestment Business Alternative. Alternatively, Panasonic will exercise best efforts to assist the Purchaser in obtaining additional licenses to such technology from third party right holders.
  - iii. Perpetual, irrevocable, non-exclusive, royalty-free licenses to patents held by Panasonic that are not predominantly used in connection with the Panasonic NiMH Divestment Business Alternative, including but not limited to those that are predominantly used in connection with businesses retained by the Parties (in particular, HEV batteries) insofar as required for the manufacture and sale of the types of portable NiMH batteries currently manufactured by the Panasonic NiMH Divestment Business Alternative.
  - iv. Perpetual, irrevocable, non-exclusive and royalty-free licenses to all know-how and recipes needed for the manufacture and sale of the types of portable NiMH batteries currently manufactured by the Panasonic NiMH Divestment Business Alternative.
- (c) the following main licenses, permits and authorisations:
- i. Best efforts to assist the Purchaser with transferring or obtaining the licenses, permits, and authorisations needed for the manufacture and sale of the portable NiMH batteries corresponding to the assets acquired by the Purchaser.
- (d) the following main contracts, agreements, leases, commitments and understandings:



- i. Best efforts to assign, novate or transfer all rights and obligations under Panasonic's existing contracts and agreements with customers relating to portable NiMH batteries. A list of the main customers is attached as Confidential Annex P-2.
  - ii. Best efforts to assign, novate or transfer all relevant third party supply and/or outsourcing agreements that Panasonic currently has in place in relation to the operation of the Panasonic NiMH Divestment Business Alternative.
- (e) the following customer, credit and other records:
  - i. All customer, credit and related records corresponding to the customer agreements and contracts assigned, novated or transferred pursuant to 6(d)(i) above.
- (f) the following Personnel (in accordance with applicable Japanese, Chinese and European labour laws and all other relevant legislation):
  - i. All production and quality control personnel working in the Wuxi facility on production of portable NiMH batteries corresponding to the assets acquired by Purchaser.
  - ii. [...] product development/technical support personnel working in the Wuxi facility on production of portable NiMH batteries corresponding to the assets acquired by Purchaser.
  - iii. [...] industrial sales and marketing personnel working in Panasonic's [...] (unincorporated Panasonic divisions).
  - iv. [...] research and development and product development/technical support personnel working in the [...] (an unincorporated division).
  - v. [...] production and quality control personnel and administrative support personnel working in the [...] (an unincorporated division).

- (g) the Key Personnel, including in particular (but not necessarily limited to), those persons listed below (in accordance with applicable Japanese, Chinese and European labour laws and all other relevant legislation):

Key Employee	Title	Description of Function
[...]	Deputy General Manager	General management in charge of materials and logistics
[...]	NiMH Factory	General management in NiMH business and factory management
	Pack Technology Department	Factory management in NiMH packing-product development
[...]	Manufacturing Department	Factory management in charge of manufacturing
[...]	Factory Management Development	Factory management in charge of operation and materials
[...]	Structure Development Department	Management in electromechanical parts development

[...]	Quality System Education Department	Management in education system development
	Client Quality Control Department	Management in quality control of parts
[...]	NiMH Quality Control Department	Management in quality control of NiMH battery products
[...]	Production Technology Department	Management in operation
[...]	Motor Equipment Department	Management in utilities
[...]	HR Department	Management in human resources
[...]	Management	Management in administration
[...] [...]	Finance Department HQ	Management in finance
[...]	Administration Management Department	Management in logistics and public relations
[...] would be appointed as the Hold Separate Manager		

- (h) the arrangements to supply the Purchaser with the following products or services from Panasonic or Affiliated Undertakings for a transitional period of [...]:
- i. A technical assistance agreement to facilitate a smooth transfer of know-how.
  - ii. A transition services agreement for short-term ancillary services in the areas of information technology, logistics, and other administrative and support functions.

- (i) Transitional arrangements for the Purchaser to supply Panasonic with portable NiMH batteries for resale by Panasonic on a retail basis [...].
7. The Panasonic NiMH Divestment Business Alternative shall be separated from the Parties' retained [...] business located in Wuxi, China prior to Closing of the divestiture in the following manner:
- (a) [...]
  - (b) Panasonic will ensure that the Purchaser has all relevant, necessary administrative and other shared functions related to the production of portable NiMH. Panasonic will include all necessary administrative functions, including general support services, human resources and finance departments in the Panasonic NiMH Divestment Business Alternative. Panasonic will assist the Purchaser in establishing its own capabilities for any ancillary service functions, such as waste processing, that are not immediately separable pursuant to a transition services agreement.
8. The Panasonic NiMH Divestment Business Alternative shall NOT include:
- (a) the Panasonic names, tradenames, and logos in any form, including but not limited to "PANASONIC", "EVOLTA", "EVOIA" and "INFINIUM";
  - (b) the books and records required to be retained pursuant to any statute, rule, regulation or ordinance, provided that copies of such documents necessary for the Panasonic NiMH Divestment Business Alternative shall be provided to the Purchaser, upon request;
  - (c) general books of account and books of original entry that comprise the Parties' or an Affiliated Undertaking's permanent accounting or tax records, provided that copies of such documents necessary for the Panasonic NiMH Divestment Business Alternative shall be provided to the Purchaser, upon request; and
  - (d) intellectual property rights that do not contribute to the current operation of the Panasonic NiMH Divestment Business Alternative.

## SCHEDULE 2

### The Sanyo Tottori Divestment Business

1. The Sanyo Tottori Divestment Business as operated to date consists formally of the entire share capital of Sanyo Energy Tottori Co., Ltd., a wholly-owned subsidiary of Sanyo whose registered place of business and place of management is at 28 Ohta, Iwami-cho, Iwami-Gun, Tottori Prefecture, Japan.
2. The Sanyo Tottori Divestment Business as operated to date includes the facility and assets located at the above-mentioned address that are utilized by Sanyo for the production of cylindrical lithium manganese dioxide batteries (“CLBs”) and coin-shaped rechargeable lithium batteries (“Rechargeable Coins”) [...], as well as for the processing of NiCd electrodes [...].
3. Following paragraph 4 of these Commitments, the Sanyo Tottori Divestment Business includes, but is not limited to:
  - (a) the following main tangible assets:
    - i. the manufacturing facility for CLBs and Rechargeable Coins, owned and operated by Sanyo located at [...] at the above-mentioned address. Specifically, the assets for this production facility include:
      - all the manufacturing assets at the Tottori facility [...], including [...] CLB production lines and [...] Rechargeable Coin production lines - that is, the total Sanyo assets that are currently used for the production of CLBs and Rechargeable Coins.
    - ii. The manufacturing facility for NiCd electrodes owned and operated by Sanyo at [...] located at the above-mentioned address.
  - (b) the following main intangible assets:
    - i. Assignment of all patents held by Sanyo that are predominantly used in the manufacture and sale of the types of CLBs and Rechargeable Coins currently manufactured or under development by the Sanyo Tottori Divestment Business, subject to the Parties receiving perpetual, irrevocable, non-exclusive and royalty-free licenses back for the use of such patents in applications other than CLBs and Rechargeable Coins. The patents concerned include in particular (but are not necessarily limited to) the patents attached as Confidential Annex 2-A;
    - ii. Sub-licensing of all patents currently licensed by Sanyo (to the extent these may be sub-licensed) that are used in connection with the production and/or sale of CLBs and Rechargeable Coins that are being divested. Alternatively, Sanyo will exercise best efforts to assist the Purchaser in obtaining additional licenses to such technology from third party right holders;
    - iii. Perpetual, irrevocable, non-exclusive and royalty-free licenses to

patents held by Sanyo that are that not predominantly used in connection with the Sanyo Tottori Divestment Business, including but not limited to those that are predominantly used in connection with businesses retained by the Parties (in particular, Li-Ion batteries) insofar as required for the manufacture and sale of the types of CLBs and Rechargeable Coins currently manufactured by the Sanyo Tottori Divestment Business;

iv Perpetual, irrevocable, non-exclusive and royalty-free licenses to all know-how and recipes needed for the production and/or sale of the types of CLBs and Rechargeable Coins that are being divested.

- (c) the following main licenses, permits and authorisations:
  - i. Best efforts to assist the Purchaser with transferring or obtaining the licenses, permits, authorisations needed for the manufacture and sale of the CLBs and Rechargeable Coins corresponding to the assets acquired by the Purchaser and/or for the processing of NiCd electrodes as currently carried out at Tottori.
- (d) the following contracts, agreements, leases, commitments and understandings:
  - i. Best efforts to assign, novate or transfer all rights and obligations under Sanyo's existing contracts and agreements with all customers relating to CLBs and Rechargeable Coins. A list of the main customers is attached as Confidential Annex 2-B.
  - ii. Best efforts to assign, novate or transfer all relevant third party supply and/or outsourcing agreements that Sanyo currently has in place in relation to the operation of the Sanyo Tottori Divestment Business. Confidential Annex 2-C contains a list of the main such agreements, in particular as regards [...].
- (e) the following customer, credit and other records:
  - i. All customer, credit and related records corresponding to the customer agreements and contracts assigned, novated or transferred pursuant to 3(d)(i) above.
- (f) the following Personnel (in accordance with applicable Japanese and European labour laws and all other relevant legislation):
  - i. All personnel currently working at the Tottori facility.
  - ii. [...] sales and marketing personnel working in [...] (an unincorporated Sanyo division) as well as [...] sales and marketing person working in [...];
  - iii. [...] research and development personnel involved in research for CLBs and Rechargeable Coins at other Sanyo entities;
- (g) the Key Personnel, including in particular (but not necessarily limited to) the persons listed below (in accordance with applicable Japanese and European labour laws and all other relevant legislation):

Key Employee	Function
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[...]	President of Sanyo Energy Tottori Co., Ltd
[...]	Director of the Business Management Division
[...]	Senior Manager [...] Supply Chain Management Division
[...]	Senior Manager at the Quality Customer Satisfaction Division [...]
[...]	Senior Manager at the Product Engineering Division
[...]	Senior Manager at the Manufacturing Division
[...]	Senior Manager at the Technology and R&D Division
[...]	Senior Manager at the Sales and Marketing Division
[...] would be appointed as hold separate manager	

- (h) the arrangements to supply the Purchaser with the following products or services from Sanyo or Affiliated Undertakings for a transitional period of [...]:
- i. A technical assistance agreement to facilitate a smooth transfer of know-how.
  - ii. A transition services agreement for short-term ancillary services in the areas of information technology, logistics, and other administrative and support functions.

4. The Sanyo Tottori Divestment Business shall NOT include:

- (a) the Sanyo names, tradenames, and logos in any form, including but not limited to “SANYO” and “ENELOOP”;
- (b) the books and records required to be retained pursuant to any statute, rule, regulation or ordinance, provided that copies of such documents necessary for the Sanyo Tottori Divestment Business shall be provided to the Purchaser, upon request;
- (c) general books of account and books of original entry that comprise the Parties’ or an Affiliated Undertaking’s permanent accounting or tax records, provided that copies of such documents necessary for the Sanyo Tottori Divestment Business shall be provided to the Purchaser, upon request; and
- (d) intellectual property rights that do not contribute to the current operation of the Sanyo Tottori Divestment Business.

CONFIDENTIAL ANNEX 1-A

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SANYO PATENT LIST: PORTABLE NIMH BATTERIES

[...]

CONFIDENTIAL ANNEX 1-B

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[...]



CONFIDENTIAL ANNEX 1-C

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[...]

CONFIDENTIAL ANNEX P-1

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PANASONIC PATENT LIST

[...]

CONFIDENTIAL ANNEX P-2

PANASONIC TOP 20 PORTABLE NIMH CUSTOMERS

[...]

CONFIDENTIAL ANNEX 2-A

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[...]

CONFIDENTIAL ANNEX 2-B

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[...]

CONFIDENTIAL ANNEX 2-C

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[...]