

***Case No COMP/M.5762 -
INNOLUX/ CHI MEI/
TPO***

Only the English text is available and authentic.

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

Article 6(1)(b) NON-OPPOSITION
Date: 25/02/2010

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PUBLIC VERSION

MERGER PROCEDURE
ARTICLE 6(1)(b) DECISION

To the notifying parties:

Dear Sir/Madam,

**Subject: Case No COMP/M.5762 – INNOLUX/ CHI MEI/ TPO
Notification of 22/01/2010 pursuant to Article 4 of Council Regulation
No 139/2004¹**

1. On 22 January 2010, 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 undertakings InnoLux Display Corporation ("InnoLux", Taiwan), Chi Mei Optoelectronics Corporation ("Chi Mei", Taiwan) and TPO Displays Corporation ("TPO", Taiwan) enter into a full merger within the meaning of Article 3(1)(a) of the EC Merger Regulation by way of exchange of shares. InnoLux, Chi Mei and TPO are together referred to below as "the parties".

I. THE PARTIES

2. **InnoLux** manufactures liquid crystal display ("LCD") panels and finished consumer products incorporating large LCD panels – primarily computer monitors. It retains almost its entire LCD panel production for internal use in its downstream operations of manufacturing monitors and televisions of up to 32 inches in size.
3. **Chi Mei** manufactures various sizes and types of LCD panels for different uses, including large LCD panels for use in monitors, televisions, notebook computers, public displays, and other large applications.

¹ OJ L 24, 29.1.2004 p. 1.

4. **TPO** manufactures almost exclusively small sized panels (i.e., less than 3.5 inches) that are used for applications such as digital cameras, mobile phones, and multifunction printers.

II. THE OPERATION AND THE CONCENTRATION

5. On 20 November 2009, InnoLux, Chi Mei and TPO entered into a Merger Agreement under which they will merge into one company by way of exchanges of shares. After the merger, InnoLux shall be the surviving company, and TPO and Chi Mei shall be dissolved. InnoLux, Chi Mei and TPO were independent companies prior to the transaction.
6. The operation therefore constitutes a concentration within the meaning of Article 3(1)(a) of the EC Merger Regulation.

III. COMMUNITY DIMENSION

7. The undertakings concerned have a combined aggregate world-wide turnover² of more than EUR 5 billion³. InnoLux and Chi Mei, but not TPO, achieved an aggregate Community-wide turnover exceeding EUR 250 million (InnoLux EUR [...] million, Chi Mei EUR [...] million, TPO EUR [...] million). None of the companies achieves more than two thirds of its Community-wide turnover in one and the same Member State. The notified operation therefore has a Community dimension.

IV. RELEVANT MARKETS

8. The parties are active in the production of LCD panels.

LCD Panels

9. LCD is a type of display technology in which the electrical and optical properties of a liquid crystal substance in neutral states of liquid and solid are applied into displays. Liquid crystals of organic molecules initially have a regular structure like a crystal but the molecule alignment changes when an electrical current is passed through affecting the degree of light penetration. When combined with a backlight and a color filter, liquid crystal array produces viewable images.⁴
10. LCD is a passive display that does not produce its own light but acts as a light modulator which needs an independent backlight.
11. The Commission in its previous decisions⁵ considered segmenting the display markets according to the size of the panel, notably on the grounds that (i) displays of the same size can to some extent be used in several different applications indifferently, and (ii)

² Turnover calculated in accordance with Article 5(1) of the Merger Regulation.

³ InnoLux, Chi Mei and TPO have a combined aggregate worldwide turnover exceeding EUR 5 000 million (InnoLux EUR [...] million, Chi Mei EUR [...] million, TPO EUR [...] million).

⁴ LCD panels installed in TV and computer monitors use thin-film transistor (TFT) technology to improve image quality (e.g., addressability, contrast). All high-resolution LCD panels are based on TFT active matrix addressing.

⁵ Case M.5589 - Sony / Seiko Epson, 22 September 2009, at paragraphs 10 et seq.; Case M.5414 - Samsung SDI / Samsung SEC / SMD, 23 January 2009, at paragraphs 10 et seq.; Case M.3459 - Epson / Sanyo / JV, 22 September 2004, at paragraphs 7 et seq.

LCD competes with different technologies depending on the displays sizes: with Organic Light Emitting Displays ("OLED") technology in the small- and medium-sized display category, and with Cathode Ray Tubes ("CRT") or plasma screens for larger displays.⁶

12. In its most recent decision concerning LCD display markets, the Commission considered displays up to 10 inches of size to be small and medium-sized displays⁷.
13. Therefore, the parties suggest that LCD panels may be distinguished between (i) small- and medium-sized displays (up to 10 inches); and (ii) larger displays (bigger than 10 inches).
14. The Commission also considered whether the market for LCD panels should be further sub-segmented according to the end-use application in which panels are used⁸.
15. Small- and medium-size displays are used in a wide range of applications: (a) digital still cameras, (b) mobile phones, (c) amusement applications, (d) multifunction printers, (e) portable DVD players, (f) personal navigation devices, (g) portable media players, and (h) other miscellaneous applications.
16. According to the parties, although the Commission has applied this differentiation only to small- and medium-sized panels, it can also appropriately be applied to large panels because the production of large LCD panels also requires customization depending on the end-use. Large LCD panels can be used in: (a) desktop monitors, (b) notebooks, (c) mini-notebooks, (d) television sets, (e) public displays, and (f) other applications. For instance, desktop computer monitors and LCD panels made for televisions differ with regard to specifications. Among other things, televisions have higher picture quality demands (inter alia, they require a wide viewing angle technology that is already incorporated during the LCD panel manufacturing process).
17. In a previous decision⁹, the Commission noted also that the market for LCD panels might have to be further segmented according to the technology used to produce the displays: amorphous silicon ("a-Si") technology or poly-silicon ("p-Si") technology.
18. According to the parties, there is no reason to consider this sub-segmentation based on the technology for large LCD panels, given that, due to cost reasons, the overwhelming majority of large LCD panels are produced based on one technology, a-Si ("amorphous silicone") The parties only use a-Si technology.
19. However, small and medium-sized panels could be further sub-segmented according to the technology that is used for the production of LCD panels¹⁰. Unlike large LCD

⁶ The organic light emitting diode (OLED) technology has a significant advantage over LCDs. OLED displays do not require a backlight to function. Thus, they can display deep black levels, draw far less power, and can be much thinner and lighter than an LCD panel.

⁷ Case M.5589 - Sony / Seiko Epson, 22 September 2009, paragraphs 12 et seq.

⁸ Cases M.5589 - Sony / Seiko Epson, 22 September 2009, paragraphs 10 et seq., and M.5414 - Samsung SDI / Samsung SEC / SMD, 23 January 2009, paragraphs 19 et seq.

⁹ Case M.3459 Seiko Epson / Sanyo / Santo Epson Imaging Devices Joint Venture, 22 September 2004.

¹⁰ Cases M.5589 - Sony / Seiko Epson, 22 September 2009, paragraphs 14 et seq., and M.5414 - Samsung SDI / Samsung SEC / SMD, 23 January 2009, paragraphs 10 et seq.

panels, small and medium LCD panels are based on a wide variety of technologies including a-Si AM-LCD, p-Si AM-LCD, MSTN PM-LCD, CSTN PM-LCD and OLED¹¹. While some of these technologies are too expensive (p-Si AM LCD) or offer too low quality (PM-LCD) for large-screen applications, LCD panel technology is much more important in the small and medium-sized segment.

Conclusion on the relevant product market

20. For the purpose of the assessment of the present transaction, the exact definition of the relevant product market for LCD displays can be left open, given that the proposed transaction does not raise any competition concerns under any alternative product market definition.

Geographic market

21. In its previous decisions¹², the Commission concluded that the relevant geographic market for LCD panels is worldwide, based on low transportation costs, homogenous prices and global trading of LCDs.

V. COMPETITIVE ASSESSMENT

Horizontal assessment

22. The parties are all active in the manufacturing of LCD panels, but their activities are mostly complementary.
23. According to DisplaySearch, an industry analyst, in a hypothetical market for all types of LCD panels the parties' combined market share would be [5-10]% (InnoLux: [0-5]%, Chi Mei: [0-5]% and TPO; [5-10]%).¹³ The largest competitors include Samsung ([10-20]%), Wintek ([10-20]%), Sharp ([5-10]%), AUO ([5-10]%) and LG ([5-10]%).
24. There are two horizontally affected hypothetical product markets where the parties' combined market share exceeds 15%: large LCD panels and small and medium-size LCD panels used in digital still cameras¹⁴.

¹¹ Active matrix (AM) LCD technologies include amorphous silicon ("a-Si") and poly-silicon ("p-Si") technology. AM-LCD offers better image quality than passive matrix (PM) LCD technologies including monochrome super-twisted nematic (MSTN) and colour super-twisted nematic (CSTN). PM-M/CSTN displays are used in some inexpensive mobile phones and informational screens of some digital products.

¹² Case M.5589 – Sony / Seiko Epson, Case M. 5414 Samsung SDI / Samsung Electronics / SMD and Case M.3459 – Seiko Epson / Sanyo / Santo Epson Imaging Devices Joint Venture.

¹³ The parties rely on data provided by DisplaySearch, an industry analyst quoted in previous Commission decisions. With respect to most of the data reported by DisplaySearch, there is no appreciable difference between shares calculated on the basis of units and shares calculated on the basis of revenue. Because DisplaySearch does not have complete data on the basis of revenue for all sub-categories of LCD panels, the parties provided shares calculated on the basis of units.

¹⁴ In theory, the transaction could be regarded as giving rise to one more affected market for desktop monitors where the parties' combined market share exceeds 15%. However, the overlap is minimal. InnoLux manufactures non-branded desktop monitors for sale to companies such as Dell, HP and Lenovo. In 2008, InnoLux had an estimated share of [10-20]% for worldwide sales ([...] units) of desktop monitors. Chi Mei does not manufacture any desktop monitors since April 2008 but has sold a small

i) Large LCD panels

25. The parties have a combined market share for the production of large LCD panels of [10-20]% (Chi Mei: [10-20]%, InnoLux: [0-5]% and TPO: [0-5]%). According to the parties, these figures are misleading as they do not account for the fact that InnoLux uses approximately [90-100]% of its LCD panels internally. If only "merchant sales" to third parties were accounted for, the parties' combined market share would be [10-20]% and therefore the transaction would not give rise to an horizontally affected market in this regard.
26. Considering a further sub-segmentation within large LCD panels based on their end-use application, the overlap between the activities of the parties is very limited.
27. Chi Mei produces and sells various types and sizes of large LCD panels to independent finished product manufacturers for use in each of these applications, whereas InnoLux sells only a small number of LCD panels to independent manufacturers of notebook computers and other large finished products (e.g., medical displays as well as industrial, amusement, avionics and vehicle displays that incorporate large LCD displays). On such segments, the combined market shares of the parties are estimated at [5-10]% for large LCD panels for notebooks¹⁵ and [5-10]% for large LCD panels for other large applications¹⁶.
28. After the transaction, the new entity will continue to face competition from several strong manufacturers of large LCD panels used in monitors and notebooks including LG ([20-30]%), Samsung ([20-30]%) and AUO ([10-20]%). It will also face strong competitors in the segment of large LCD panels used for other large applications. These include AUO ([20-30]%), Sharp ([20-30]%) and LG ([5-10]%).

b) Small and medium LCD panels

29. The parties have a combined market share for the production of small and medium LCD panels of [5-10]% (Chi Mei: [0-5]%, InnoLux: [0-5]% and TPO: [5-10]%).
30. Considering a further sub-segmentation within small and medium LCD panels based on their end-use application, the overlap between the activities of the parties concerns mainly (i) LCD panels used in digital still cameras, (ii) LCD panels used in mobile phone, (iii) LCD panels used in portable navigation devices, and (iv) LCD panels used in other miscellaneous applications (such as mini-notebooks, digital picture frames, viewfinders, automobile monitors), as described in the table below:

	LCD panels for digital still cameras	LCD panels for mobile phones	LCD panels for portable navigation	LCD panels for other miscellaneous
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number of monitors ([...] units) in 2009 to empty the remaining stock. Chi Mei sold and transferred the monitor manufacturing equipment to TPV Technology.

¹⁵ InnoLux: [0-5]% ; Chi Mei: [5-10]%.

¹⁶ InnoLux: [5-10]% ; Chi Mei: [0-5]%.

			devices	applications
InnoLux	[0-5]%	[0-5]%	[0-5]%	[5-10]%
TPO	[10-20]%	[5-10]%	[0-5]%	[0-5]%
Chi Mei	[0-5]%	[0-5]%	[0-5]%	[0-5]%

31. The parties' combined market share is therefore [10-20]% for the production of LCD panels used in digital still cameras, [10-20]% for mobile phones, [0-5]% for portable navigation devices, and [10-20]% for other miscellaneous applications.
32. The increment in market share is minimal and there are strong competitors including Wintek, Samsung, Sharp, Sony, AUO and Hitachi who compete in these segments of LCD panels. In particular, in the mobile phone segment the parties will compete with Wintek ([10-20]%), Samsung ([10-20]%) and Sharp ([5-10]%). In the portable navigation devices segment, the new entity will face Sharp ([30-40]%), Samsung ([30-40]%) and AUO ([5-10]%). In the digital still cameras segment, the new entity will face Sony ([20-30]%), AUO ([10-20]%) and Hitachi ([10-20]%). In the segment for other applications the largest competitors will be AUO ([10-20]%), TMDisplay ([10-20]%) and Sharp ([5-10]%).
33. Considering a further sub-segmentation within small and medium LCD panels based on technology, the overlap between the activities of the parties concerns only the a-Si ("amorphous silicone") LCD technology.
34. In such sub-segment, the parties' combined market shares remain very limited: InnoLux ([0-5]%), TPO ([0-5]%) and Chi Mei ([0-5]%). The parties will continue to face strong competitors including AUO ([10-20]%), Hitachi ([10-20]%) and Epson ([5-10]%).

Vertical assessment

35. The transaction does not give rise to any vertically affected markets. InnoLux purchases large LCD panels from Chi Mei for integration into InnoLux's monitors¹⁷ and their market shares on both the upstream and the downstream markets do not exceed 25%. Chi Mei's share of the market for large LCD panels used in monitors is [10-20]%. InnoLux's share of the market for LCD monitors is [10-20]%.

¹⁷ There is no actual or potential vertical relationship between TPO and InnoLux. TPO does not sell any panels to InnoLux which is also not active in downstream products containing small or medium LCD panels.

VI. CONCLUSION

36. For the above reasons, the Commission has decided not to oppose the notified operation and to declare it compatible with the common market and with the EEA Agreement. This decision is adopted in application of Article 6(1)(b) of Council Regulation (EC) No 139/2004.

For the Commission
(signed)
Joaquín ALMUNIA
Vice-President of the Commission