

***Case No COMP/M.2367 -  
SIEMENS / E.ON /  
SHELL / SSG***

Only the English text is available and authentic.

**REGULATION (EEC) No 4064/89  
MERGER PROCEDURE**

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Article 6(1)(b) NON-OPPOSITION  
Date: 27/03/2001

*Also available in the CELEX database  
Document No 301M2367*



COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 27.03.2001

SG(2000)D/287183

In the published version of this decision, some information has been omitted pursuant to Article 17(2) of Council Regulation (EEC) No 4064/89 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 Where possible the information omitted has been replaced by ranges of figures or a general description.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

To the notifying parties

Dear Sir/Madam,

**Subject: Case No COMP/ M.2367 - SIEMENS / E.ON / SHELL / SSG**

Notification of 27 February 2001 pursuant to Article 4 of Council Regulation No 4064/89

1. On 27/2/2001, the Commission received a notification of a proposed concentration pursuant to Article 4 of Council Regulation (EEC) No 4064/89<sup>1</sup> by which Shell Erneubare Energien GmbH ("Deutsche Shell"), a holding company within the Royal Dutch Shell group ("Shell"), acquires within the meaning of Article 3(1)(b) of the Council Regulation joint control of Siemens Solar GmbH ("SSG"), controlled by Siemens Aktiengesellschaft ("Siemens") and E.ON Energie AG ("E.ON"), by way of purchase of shares.
2. After examination of the notification, the Commission has concluded that the notified operation falls within the scope of Council Regulation No 4064/89 and does not raise serious doubts as to its compatibility with the common market and with the functioning of the EEA Agreement.

**I. THE PARTIES**

3. SSG develops, manufactures and sells solar cells and modules. Siemens is active in electronic engineering and electronics. E.ON Energie is a subsidiary of E.ON AG which is in turn the holding company of the E.ON group. The E.ON group is active

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<sup>1</sup> OJ L 395, 30.12.1989 p. 1; corrigendum OJ L 257 of 21.9.1990, p. 13; Regulation as last amended by Regulation (EC) No 1310/97 (OJ L 180, 9. 7. 1997, p. 1, corrigendum OJ L 40, 13.2.1998, p. 17).

in the fields of production, transmission, distribution and supply of electricity, wholesale transmission and local distribution of gas, and other areas among which the production of silicon wafers used in certain types of solar cells. Deutsche Shell is a holding company within the Royal Dutch/Shell group of companies. It holds interests in Shell operating companies that are active in the field of renewable energy in Germany.

## **II. THE OPERATION**

4. On 20 February 2001, Deutsche Shell, Siemens and E.ON Energie reached agreement that Deutsche Shell shall join as a new shareholder in Siemens Solar GmbH, an existing joint venture company between Siemens and E.ON Energie in the field of solar energy. For this purpose, Deutsche Shell will participate in a capital increase of SSG and will transfer to the joint venture company its German solar activities which are currently conducted by Deutsche Shell. In addition, Deutsche Shell will also pay a cash contribution.

## **III. COMMUNITY DIMENSION**

5. The undertakings concerned have a combined aggregate world-wide turnover of more than EUR 5 billion<sup>2</sup> (Siemens: EUR 78,4 billion, E.ON: EUR 98,8 billion, Shell EUR 72,4 billion, SSG EUR 88,2 million). More than two undertakings concerned have a Community-wide turnover in excess of EUR 250 million (Siemens:EUR [...]; E.ON:EUR [...]; Shell:EUR [...]), but 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. As each of two undertakings (Siemens and Shell) have a turnover exceeding EUR 250 million in the territory of the EFTA states to which the EEA agreement applies the operation also constitutes a co-operation case under the EEA Agreement pursuant to Article 57 of that Agreement.

## **IV. COMPATIBILITY WITH THE COMMON MARKET**

### ***A. Relevant product markets***

6. The proposed transaction relates to the activities of the parties in manufacturing and distributing products that convert sunlight into electricity (photovoltaics). Solar cells can be produced from discrete slices or „wafers“ of silicon or from so-called „thin film“-layers made from a range of materials. For efficient application, numerous cells are connected together and put under glass or other protective material which is then framed in order to become a solar module. Solar modules themselves are combined with other components, such as inverters, charge controllers, mounting structures or (in the case of off-grid applications) batteries to build a solar energy system.
7. The parties take the position that the relevant market is a market for "photovoltaics" In their view it would be inappropriate to break down the relevant product markets

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<sup>2</sup> Turnover calculated in accordance with Article 5(1) of the Merger Regulation and the Commission Notice on the calculation of turnover (OJ C66, 2.3.1998, p25). To the extent that figures include turnover for the period before 1.1.1999, they are calculated on the basis of average ECU exchange rates and translated into EUR on a one-for-one basis.

into further separate product markets, following the technology used. The parties submit that a distinction between different technologies would be inappropriate since film cells is still a niche product with very little economic impact. Customers do not decide for or against a certain technology but rather on efficiency and price. The parties further submit that a distinction pursuant to field of use is not appropriate either since, from a demand side perspective, solar cells and modules are similar irrespective of their intended use. However, the parties agree that solar cells and modules for use in satellites are substantially different from the ones used for terrestrial applications as the former use material which is lighter and therefore more expensive.

8. According to the parties, cells, modules and systems constitute one single product market for photovoltaics. The parties submit that all cell manufacturers are integrated in order to combine their manufactured cells into modules. Furthermore it is the parties' view that the industry looks at the photovoltaics market with a view to the manufactured photovoltaic power without making a distinction between cells, modules or systems. On the other hand customers, according to the parties, usually purchase modules. Thus, also from that point of view of the parties, a differentiation between cells and modules would be rather artificial.
9. The information submitted by the parties shows that the customers for cells and modules generally are not identical. Solar cells are to a certain extent sold to OEMs (original equipment manufacturers), who use the cells for tailor-made applications, and to module manufacturers, as not all module manufacturers are vertically integrated and even those who are sometimes do not produce a sufficient number of cells for their own demand. Modules are sold to system assemblers, end customers who do their own assembly (e.g. utilities), project developers as well as OEMs. Systems are sold to installers/distributors, who sell them to various end consumers. They are also sold to utilities and directly to private individuals and small and medium sized companies. A large number of companies are active downstream in integrating and selling complete solar systems without producing modules and/or cells. Therefore there may be separate markets for solar cells, solar modules and solar system integration. In a former decision the Commission made a distinction between orbital solar cells and terrestrial photovoltaics but did not take a final position.<sup>3</sup> The same can be done in the present case as none of the parties is active in the production of cells or modules for use in satellites. There is on the other hand no indication that there are distinct product markets for each technology used or for each possible field of use.
10. However, for the purpose of this decision a more precise product market definition is not necessary because under any product market definition considered competition concerns are not raised by the proposed operation.

***B. Relevant geographic markets***

11. The parties submit that the relevant geographical market is world wide. They submit that products are similar all over the world, and that cells and modules follow the

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<sup>3</sup> case IV/M.441 – Daimler-Benz AG / RWE AG

same technical standards. Furthermore transport costs for cells as well as for modules are low and do not form an obstacle to world-wide trading in those products. Both, cells and modules, are supplied world wide regardless of the location of the plant where they are produced. According to the parties prices are homogenous all over the world.

12. The information provided by the parties confirms that cells and modules are sold on a world wide basis. The parties themselves sell cells and modules all over the world and so do all of the main producers in Europe. SSG imports two-thirds of its modules from subsidiaries in the United States. Competitors of the parties such as Astropower and Kyocera do not have manufacturing sites but import cells and modules into the EEA. There is thus no indication that the geographic market for solar cells and modules could be smaller than world-wide.
13. On the basis of the foregoing, the Commission regards solar cells and modules as world markets.
14. The assumption of a world market seems, however, to be less evident for the integration of solar systems since market conditions vary significantly due to different State Aid regimes granted for the implementation of photovoltaic systems and different tax provisions which affect the price relations between alternative systems for the supply of electric energy. Given these differences, which occur on the level of Member States, it cannot be excluded that the relevant geographical markets for solar systems integration are national.
15. For the purpose of this decision, however, it does not have to be decided whether, in case that solar systems form a separate product market, the market for systems is national or larger. Under any possible market definition no competition concerns are raised by the operation.

### **C. Assessment**

#### *General market conditions*

16. The terrestrial photovoltaics sector is still small but rapidly expanding, with growth rates of 15-30 per cent annually, depending on the region. About 50 per cent of the market is enabled by subsidies, with several governments, notably Japan, Germany and the Netherlands, running subsidy schemes as an incentive to buy and install this technology. According to information provided by the parties there are no barriers to trade, the costs of transportation of cells and modules are not significant and price levels tend to be homogenous.

#### *World-wide market for photovoltaics*

17. On a world-wide market for photovoltaics (cells, modules and systems) as submitted by the parties their combined market shares would be about [10-20] per cent, the increment to Siemens market share contributed by Shell being less than [1-5] per cent. There is a sufficient number of competitors in the market, the largest ones being BP Solarex, Kyocera and Sharp (all between [...] per cent market share), with a further six competitors having market shares between [1 and 15] per cent. The operation thus neither reinforces nor creates a dominant position on such a market.

### *Components markets: solar cells and solar modules*

18. Apart from an incidental sale in 1999, Shell is not active as a supplier in the market for solar cells. All of its solar cell production is used in-house for the production of modules. The parties therefore submit that, if solar cells were considered as a separate market, it should not be considered a horizontally affected market. In any event it is not a vertically affected market as the parties' combined market share does not exceed 25 per cent on this market nor on silicon wafers or any upstream market of raw materials for cells nor on the downstream market of modules. In any case there is a sufficient number of strong competitors with about six other competitors having achieved a market share in excess of 10 per cent in 1999.
19. Equally, a number of strong competitors are active in the world-wide modules market where the parties' combined market share, depending on the estimate, is [between 10 and 20 per cent]. Competitors with a market share higher than that are BP Solarex ([15-25] per cent in 1999) and Kyocera ([10-20] per cent in 1999). Another strong competitor is Sharp with [5-15] per cent in 1999.
20. On a possible combined market of cells and modules, in which the parties' combined market shares would be [10-20]%, the competitive situation is not substantially different from the one on the modules market as all the major manufacturers are vertically integrated. For the same reason the hypothetical consideration of a combined market between modules and systems would lead to results equivalent to those on a general photovoltaics market.
21. The proposed operation therefore does not create or strengthen a dominant position on any of these markets.

### *Systems integration*

22. Of the possible national markets for systems integration, only one market in the EEA, the Dutch market, has to be considered as an affected market. In all other markets SSG, Siemens and E.ON are either not active in systems integration or the parties' combined market shares remain below 15%.
23. On the Dutch market Shell reaches a market share of [30-40]% of sales of systems to end-users. There is no overlap as none of the other parties is active on this market. Various competitors have estimated market shares of between [<25]%) (Stork, SolarNed and Stroomwerk) and entry into the systems integration market is easy as components can be supplied by various producers and no large R& D costs are involved. The overall investment necessary for market entry is estimated to amount to less than EUR 0,5 million.
24. Therefore the proposed operation does not lead to the creation or reinforcement of a dominant position on the Dutch market for systems integration.

## V. CONCLUSION

25. 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 (EEC) No 4064/89.

For the Commission,

*Signed,*  
Mario MONTI  
Member of the Commission