

```
<%@LANGUAGE="VBSCRIPT"%> <% Dim Recordset1 Dim Recordset1_numRows Set Recordset1 =
Server.CreateObject("ADODB.Recordset") Recordset1.ActiveConnection = MM_ifiec_STRING
Recordset1.Source = "SELECT * FROM electricity ORDER BY volgorde DESC"
Recordset1.CursorType = 0 Recordset1.CursorLocation = 2 Recordset1.LockType = 1 Recordset1.Open()
Recordset1_numRows = 0 %>
```

INTERNATIONAL FEDERATION OF INDUSTRIAL ENERGY CONSUMERS

EUROPE



Head Office: 119 Chaussée de Charleroi B- 1060 Brussels

Tel: 32 2 542 06 87 Fax: 32 2 542 06 92

IFIEC Europe

Documents- Electricity

Brussels: 1/12/2000

Concentration and Competition of Power Generators The Herfindahl-Hirschman Index

The use of the Herfindal-Hirschman Index - HHI - is valuable in assessing market concentration and thus a measure of competition amongst electric power generators in European Union countries.

The United States Department of Justice describes the HHI as follows:

"HHI means the Herfindahl-Hirschman Index, a commonly accepted measure of market concentration. It is calculated by squaring the market share of each firm competing in the market and then summing the resulting numbers. For example, for a market consisting of four firms with shares of thirty, thirty, twenty and twenty percent, the HHI is 2600 ($30^2 + 30^2 + 20^2 + 20^2 = 2600$).

The HHI takes into account the relative size and distribution of the firms in a market and approaches zero when a market consists of a large number of firms of relatively equal size. The HHI increases both as the number of firms in the market decreases and as the disparity in size between those firms increases.

Markets in which the HHI is between 1000 and 1800 points are considered to be moderately concentrated, and those in which the HHI is in excess of 1800 points are considered to be concentrated. Transactions that increase the HHI by more than 100 points in concentrated markets presumptively raise antitrust concerns under the Horizontal Merger Guidelines issued by the U.S. Department of Justice and the Federal Trade Commission."

When using the HHI it should be borne in mind that determining the relevant markets in which competing electricity generators operate may not be straightforward. One reason is because transmission constraints may split national systems into regions within which the

level of concentration is higher when compared with the national system.

Nevertheless observing the trends of the HH index on a EU country by country basis will provide a useful view of the development of competition.

A preliminary view of HHI indices for some EU countries as compiled by the IFIEC Working Party Electricity in September 2000 is shown below:

Country	HHI Value
England & Wales	1209
Italy	4021
Belgium	8017
Germany	1740
France	9038
Greece	9800
Netherlands	3300

Conclusion:

According to this evaluation five out of seven analysed national electricity markets within the EU have to be considered concentrated. Here market dominance of the main suppliers is evidently a barrier to effective competition.

IFIEC Europe, Working Party Electricity will monitor the HHI trend as a guide to movements in market concentration and thus a measure of competition amongst electric power generators in European Union countries. An HHI value is published by IFIEC Europe and will be regularly updated.

<% Recordset1.Close() Set Recordset1 = Nothing %>