Energy Efficiency, Technology Transfer and Emission Reduction: a few considerations on business key role

Bruxelles, June 28th, 2006
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Enel SpA - Italy

- Leader operator on Italian electricity market (production, distribution, retail)
- Second operator on Italian gas market
- Among World leader players in energy
- Second operator in Europe (market capitalisation)

Stock exchange capitalisation (13th October 2005)
Enel’s “renewables” portfolio in the world

- **USA**: 381 MW hydro, wind
- **Canada**: 40 MW hydro, biomass, biogas
- **Guatemala**: 80 MW - hydro
- **El Salvador**: 115 MW - geo partner
- **Costa Rica**: 60 MW - hydro, wind
- **Chile**: 90 MW - hydro
- **Italy**: 15,200 MW hydro, geo, wind, pv.
- **Slovakia**: 2,400 MW Hydro
- **Spain**: 1,240 MW¹ hydro, wind, biomass

¹ plants in partnership included

Updated May 2006
Enel’s commitment to reduce its specific greenhouse gas emissions*

* Voluntary agreement signed in year 2000 with Italian Ministry of Environment and Ministry of Industry
Enel’s commitment for the future

**Strong commitment to renewables:**

– EUR 1,568 million invested in 2001-2005

– EUR 2,309 million committed in the next years

**New initiatives on Kyoto project mechanisms:**

- CDM
- JI

**Enel emissions evolution**

- **CO₂**
  - 2000: 536 g/KWh
  - 2004: 504 g/KWh
  - 6% decrease

- **SO₂**
  - 2000: 2.5 g/KWh
  - 2004: 1.0 g/KWh
  - 60% decrease

Source: Enel
Main trends in global greenhouse gas emissions

Global greenhouse gas (GHG) emissions
Million tons of CO₂ equivalent 2003

<table>
<thead>
<tr>
<th>Thereof 80% CO₂</th>
<th>27.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>China, India, Brazil, etc.*</td>
<td>10.5</td>
</tr>
<tr>
<td>US</td>
<td>6.9</td>
</tr>
<tr>
<td>Australia</td>
<td>0.5</td>
</tr>
<tr>
<td>Russia, Ukraine, Belarus</td>
<td>2.5</td>
</tr>
<tr>
<td>CAN, JAP, NZ, NOR, CH</td>
<td>2.3</td>
</tr>
<tr>
<td>Europe (28**)</td>
<td>5.1</td>
</tr>
</tbody>
</table>

- Only 1/3 of the world emissions committed to Kyoto reduction targets
- No targets for biggest growth regions (China, India)
- Current Kyoto targets cover only 2008 - 2012, further targets in negotiation

* No recent data available, mostly 1994/95 figures
** Including Romania, Bulgaria, Croatia
Source: UNFCCC, McKinsey
JI/CDM development process shows how cooperation between developed and developing countries could work

A lot of projects in the approval pipeline…

JI/CDM pipeline by stage of approval
Estimated reduction p.a., in million tons CO₂, as of April 2006

<table>
<thead>
<tr>
<th>Status</th>
<th>Submitted proposals</th>
<th>Reviewed proposals</th>
<th>Approved projects</th>
<th>Issued projects</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. of projects</td>
<td>406</td>
<td>554</td>
<td>143</td>
<td>10</td>
<td>1,113</td>
</tr>
</tbody>
</table>

… with a recent acceleration in the approvals

Evolution overtime of approved projects
Estimated reduction p.a., in million tons CO₂

<table>
<thead>
<tr>
<th>Month</th>
<th>Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>sep-05</td>
<td>9</td>
</tr>
<tr>
<td>oct-05</td>
<td>9</td>
</tr>
<tr>
<td>nov-05</td>
<td>18</td>
</tr>
<tr>
<td>dec-05</td>
<td>18</td>
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<tr>
<td>jan-06</td>
<td>30</td>
</tr>
<tr>
<td>feb-06</td>
<td>32</td>
</tr>
<tr>
<td>mar-06</td>
<td>49</td>
</tr>
<tr>
<td>apr-06</td>
<td>49</td>
</tr>
</tbody>
</table>

+55%

*Reviewed proposals: project submitted for public comments on UNFCCC website. Approved projects: projects registered by the CDM Executive Board or JI Supervisory Committee. Issued projects: CDM EB or JI SC has issued CERs/ERUs

Source: Point carbon, UNEP (United Nation Environment Program)
Appropriate regulatory frameworks

- China and India are offering more and more CDM opportunities, especially of industrial origin but CDM projects still present some problems, and in particular the high uncertainty that is in part linked to the procedures for credit recognition.

- Investors need clear, long-term incentives: guaranteed withdrawal of the power generated and/or subsidized prices, in order to make “renewables” competitive with other commercial technologies.

- Uncertainty of value of credits after 2012 makes it very difficult, at this stage, even for the investors that are more sensitive to sustainable development, to decide further investment.

- Enel wellcomes every effort by governments and international financial institutions that contribute to create a “business climate” appropriate to attract long-term business partners.
Enel’s commitment for sustainable development

**Improvement of thermal power plants environmental sustainability:**
- Conversion of oil plants to CCGT/clean coal
- QUASAR project to maximize heat rate of thermal power plants operations (from 2,269 Kcal/KWh in 2000 to 2,191 Kcal/KWh in 2004)
- Installation of BAT solutions to reduce emissions

**R&D investments to develop new processes and technologies to improve emission efficiency, e.g.:**
- European “Zero emission fossil fuel power plan” (ZEFFPP) project: member of advisory council
- Solar energy: collaboration with Enea in the “Archimede” project
- CO2 sequestration: participation to “Dynamis” EU project
- Hydrogen: participation to “Hydrogen Park” consortium to develop hydrogen combined cycle (16MWe in operation by 2007)
- Clean coal technologies and coal pyrolysis
Enel’s capacity building program

• “e8” is a group of electricity companies of the G8 countries who are committed to promote sustainable energy development and share their expertise with partners in developing countries.
• The e8 have recently launched a human capacity building program to share best practices in power generation in order to improve emissions profiles.
• This program fits within the Asia-Pacific Partnership initiative.
• In the framework of the e8 program, Enel is ready to share with engineers from developing economies its experience in improving the efficiency and environmental performance of its thermal power plants through changes in technologies and processes.
• As an example, Enel is ready to organise - as soon as in operation - technical visits to the new plant it is building in Civitavecchia, which is at the leading edge of pulverized coal technology, both in terms of efficiency (from 38 to 45%) and environmental performance (as an example, 99.9% particulate abatement).
THANK YOU FOR YOUR ATTENTION

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