

AES – WWF Co-operation in Hungary

Vienna, November 13–14, 2006



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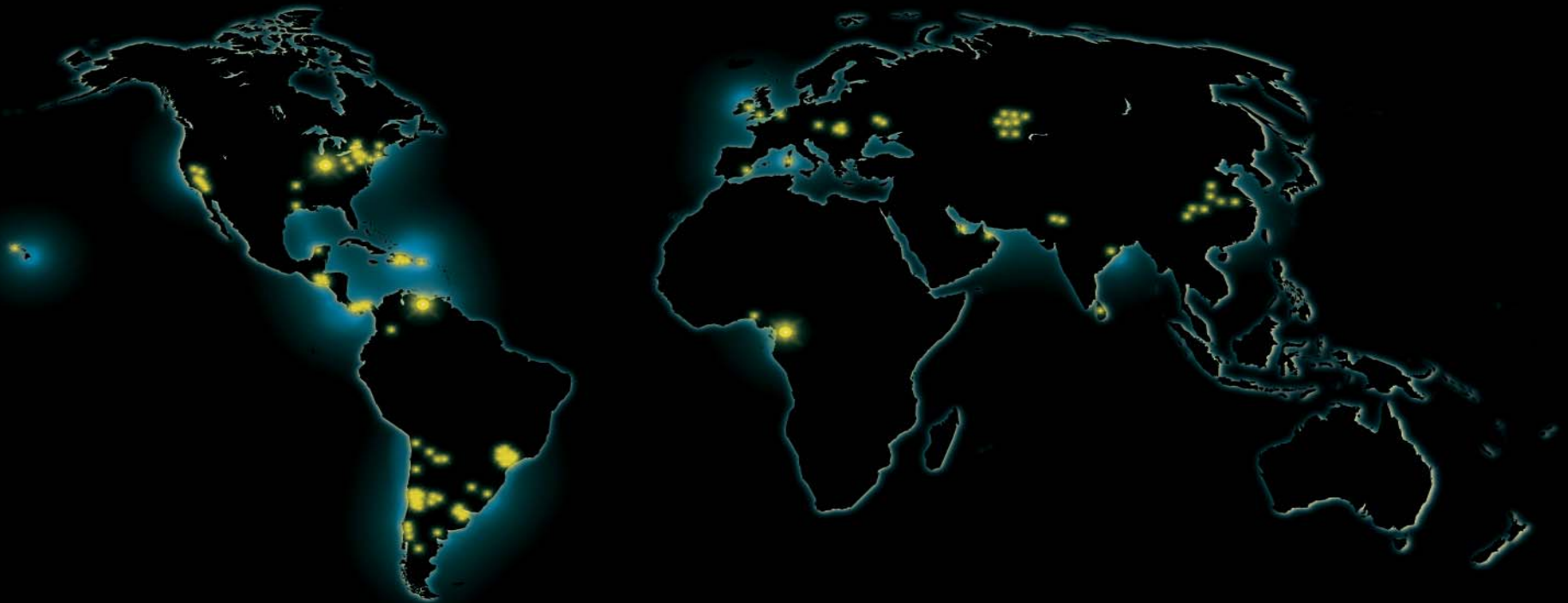
- AES Corporation in brief
- AES in Hungary
- Case study –Borsod PP Biomass project
- AES-WWF Co-operation
 - Scope of Works
 - Where we are
 - Benefits



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AES is Among the Largest Global Power Companies

• AES OPERATIONS



Through 123 generation facilities, AES has the capacity to generate 44,000 MW of electricity and serve 100 million people in 26 countries on five continents

Our global workforce of 30,000 is committed to operational excellence and meeting the world's growing power needs



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Wide range of AES Capabilities



Distribution



Coal-Fired



Hydroelectric



Wind Power



LNG



Gas-Fired



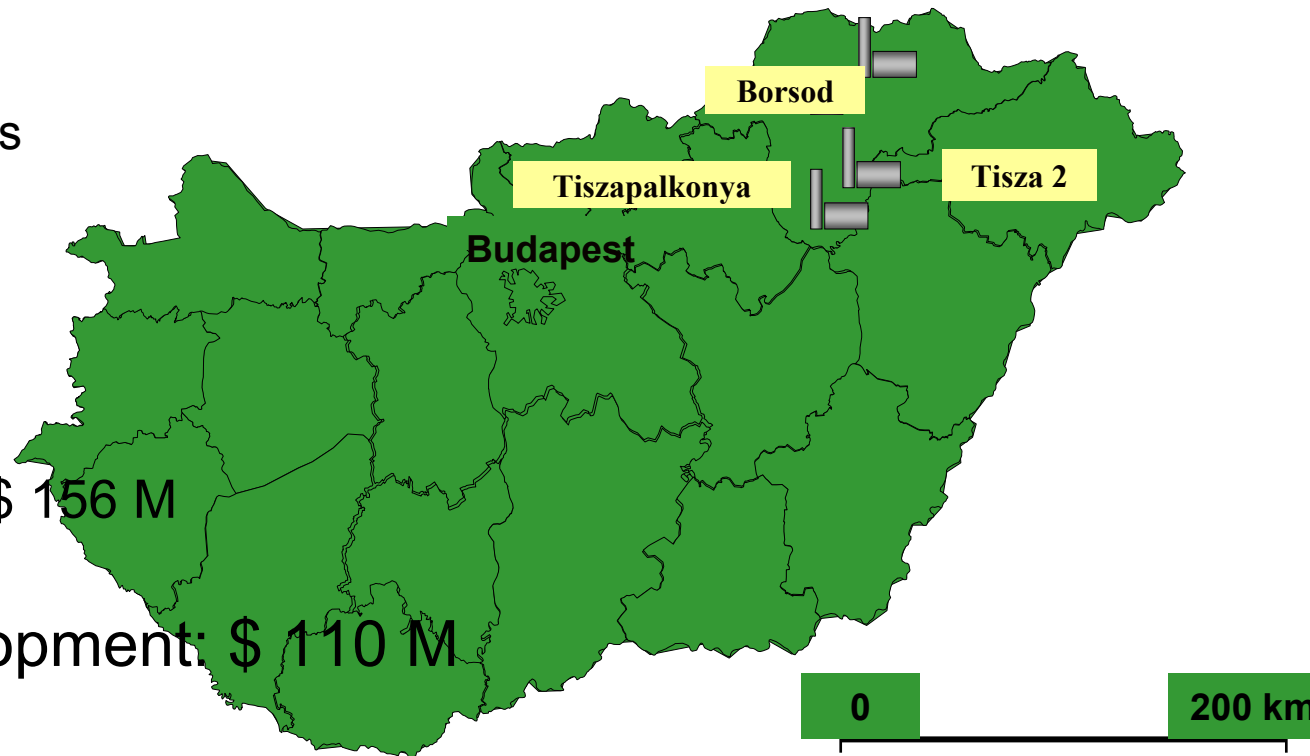
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AES in Hungary

Location

North-Hungary

Three Power Plants



Acquisition

Year: 1996

Investment to date: \$ 156 M




Completed development: \$ 110 M

Mission Statement: "To safely, reliably, and efficiently supply electrical power services to meet the requirements of our customers and Stakeholders".



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AES Portfolio in Hungary

	Technical details	Business Characteristics
 <p>T i s z a z s o l a</p>	<p>Capacity: 860 MW 4 x 215 MW Units</p> <p>Fuel: gas and oil</p> <p>Grid 220 kV</p> <p>Connection: 400 kW</p> <p>People: 184</p>	<ul style="list-style-type: none"> - Operational Licence issued by HEO - Power Purchase Agreement with MVM - Fuel Supply Agreement with MOL - IPPC Environmental Licence by NHEA - Electricity service for public utility
 <p>B o r s o d</p>	<p>Capacity: 96 MW</p> <p>Fuel: black coal and biomass</p> <p>Grid</p> <p>Connection: 120 kV</p> <p>People: 181</p>	<ul style="list-style-type: none"> - Operational Licence issued by HEO - Coal based power sales for Market - Renewable electricity sales for EMASZ - Steam supply for BorsodChem - IPPC Environmental Licence by NHEA
 <p>T p a l k o n y a</p>	<p>Capacity: 116 MW</p> <p>Fuel: black coal and biomass</p> <p>Grid</p> <p>Connection: 120 kV</p> <p>People: 148</p>	<ul style="list-style-type: none"> - Operational Licence issued by HEO - Coal based power sales for Market - Renewable electricity sales for EMASZ - Steam supply for TVK and MOL - IPPC Environmental Licence by NHEA



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AES Hungarian biomass business





- 50 year old plant
 - Low efficiency
- Designed for burning poor quality domestic coal (lignite)
 - Sulphur 1-2%; Ash 30-40%;
CV 7,000-9,000 kJ/kg
- Very poor environmental performance
 - Dust: 600mg/m³;
 - Sulphur: 10,000mg/m³
- All main contracts set to expire at the end of 2003
 - Power Purchase Agreement
 - Operational licence
 - Environmental licence
- Plant planned to close and start rehabilitation of site
 - Borsod 2002 Tiszapalkonya 2004





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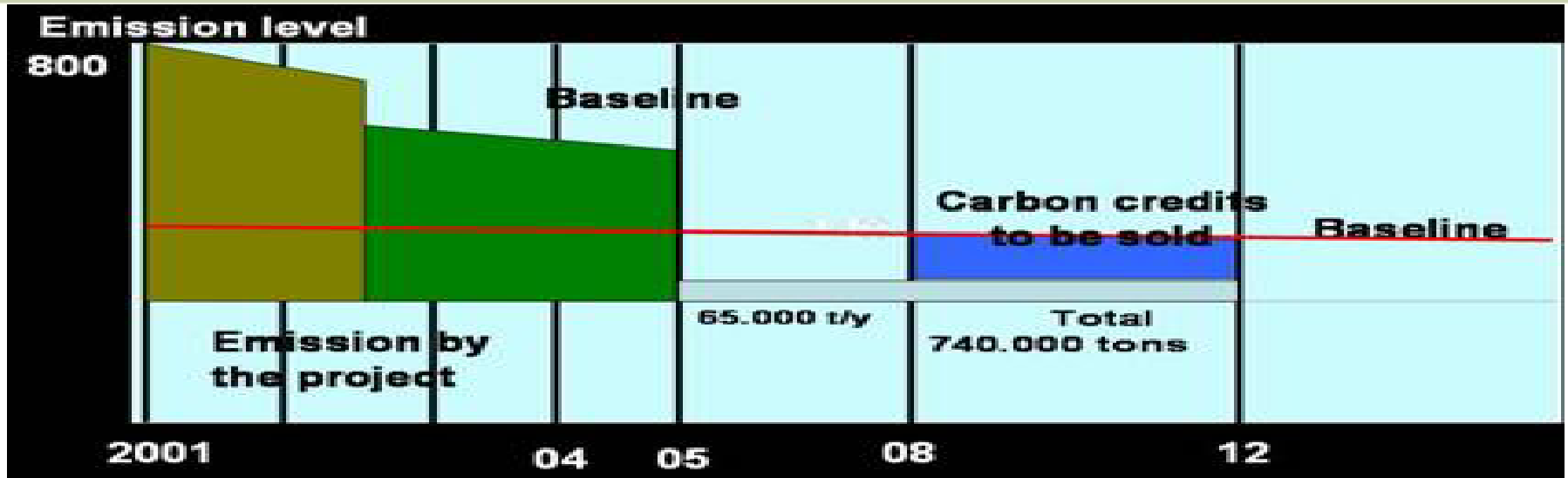
Visit to US Biomass plants 2002





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Joint Implementation with the Dutch government



Commitment period: 2008 – 2012.

CO₂ credit to be committed: 140,000 tons/a

Total amount: 740,000 tons

Value: €3.1M

Prepayment: 50% to support the investment, 21% of the total investment costs.

Save for the national emission allocation: 760.000 tons /a !!!

Dutch Government agreement concluded: 18th December, 2002.



- December 2002
 - agreement signed with VEIKI-Transelektro for the refurbishment of Boilers # 5 and 7
 - Refurbishment of ESP-s in Boiler # 5 and 7
- March 2003
 - financing agreement was concluded with Raiffeisen Bank
- Fuel supply agreements put in place
 - Északerdő Rt., Egererdő Rt., Ipoly Erdő Rt. and Pilisi Parkerdő Rt., privately owned forest companies
 - 280,000 tons/a in long term fuel supply agreements over 10 years

Trial operation of the boilers started on 20th August, 2003 with Boiler # 5 and 26th September 2003 with Boiler # 7

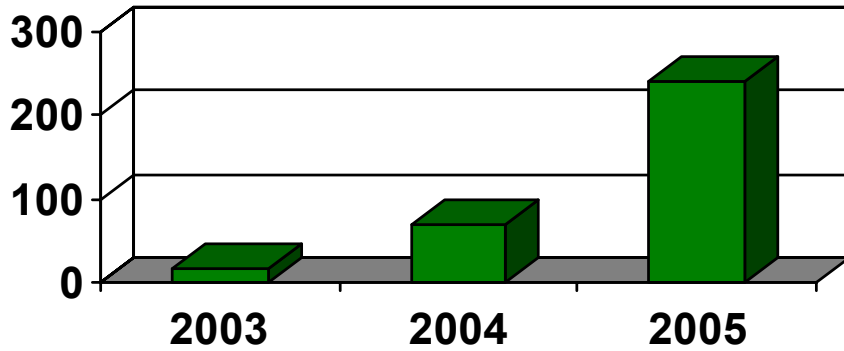


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Performance improvements

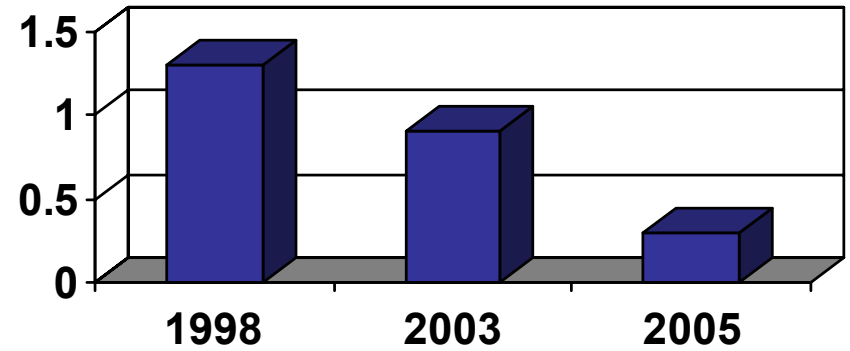
Renewable generation

■ GWh



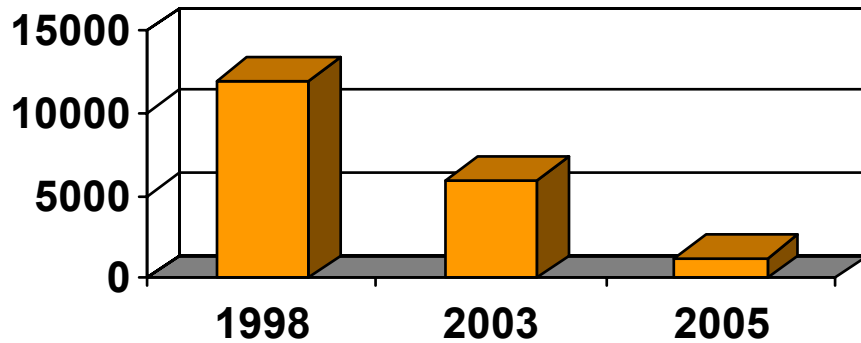
CO2 emission

■ mt



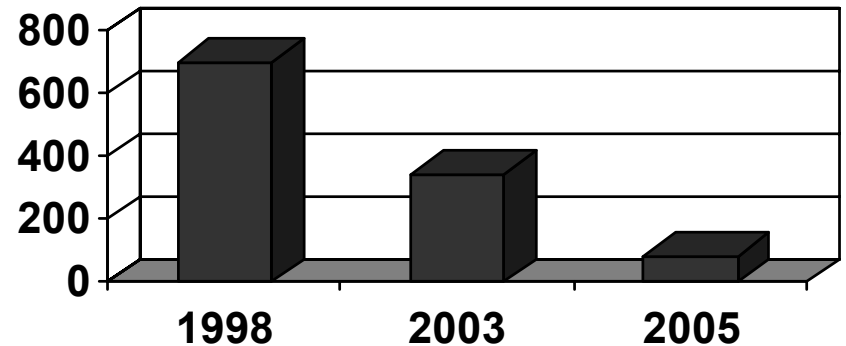
SO2 emission

■ mg/m3



Dust emission

■ mg/m3





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Current fuel sources and further options in Hungary

- AES Hungarian plants have a very good geographical location close to the Slovak and Ukrainian forests
- Main types of biomass fuels:
 - Sawdust, wood-chip and logs from forestry management and saw mills
- Agricultural wastes:
 - DDGS
 - Solid Recovery Fuel:
 - SRF
- Wood based energy crops
 - Poplar clone developed in Italy, under testing at Borsod site

Planning to plant wood based energy crops in co-operation with WWF



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Social Responsibility - Value of the Company

Social Responsibility Policy

- Low cost, safe, clean and reliable electricity production
- AES strives to carry out activities to support solutions for other social issues

Main activities were

- Donations, charity for hospitals, children's home
- Fish restocking – after the cyanide pollution of Tisza River
- Afforestation – in the area of Hortobagy National Park

New Initiative - WWF Corporate Club

- AES Tisza Power Plant Ltd was a member of the founder's team.
- AES supports WWF's conservation work in Hungary through its membership in WWF's Corporate Club





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Current initiatives in Hungary



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- In August 2005, Hungarian AES businesses signed a cooperation and support agreement with WWF Hungary
- Under the agreement WWF will provide professional support and consulting services to AES
- AES Hungary is committed to jointly identify with WWF the most appropriate method and location for an energy plantation project and help AES Hungary manage associated PR arrangements





Investigation of the conditions and opportunities concerning the establishment of energy plantations

- evaluation of deficiencies and opportunities existing in the current utilisation practices of available lands and the subvention system considering the interests of energy plantations.
- identification of basic requirements and guidelines concerning the environmentally appropriate implementation of plantations.
- assessment of areas suitable for large scale plantations and crop rotation with special emphasis on the areas identified by the Parties.
- preparation of an energy plantation program identifying the resources necessary for flawless implementation and the subvention scheme required for the achievement of the targeted objectives.
- elaboration and representation of a professional statement towards decision makers and the agricultural entrepreneurs of the involved area.

Communication support

Selection of Pilot Areas and the establishment of Pilot Plantations

Establishment of a Professional Forum for Energy Plantations

WWF Hungary shall assess the aforementioned areas primarily on the basis of considerations related to the protection of nature and the environment.

In case the establishment of these plantations violate interests of nature and environment protection AES Hungary shall not support the objected plantations.



- ✓ **Prepared a preliminary study about the conditions and opportunities concerning the establishment of energy plantations**
- ✓ **Investigation of the current wood production practice**
- ✓ **Assessment of lands that are suitable for energy plantations**
 - **Focusing on the Power Plant's surroundings**
 - **Feasibility study – in progress**
- ✓ **Evaluation of alternative plant fuels**
 - **Investigation of hemp's applicability – Miskolc University**



Benefits of the Co-operation

- AES recognized that the most significant opportunity for advancement in Hungary lies within the framework of biomass utilisation and growing agricultural products for energy purposes
- Increasing the utilisation of renewable energy sources to achieve sustainable development and the following social and economic benefits targeted in various EU directives
 - reduced dependency on imported energy sources
 - improved environmental conditions
 - new workplaces
 - contribution to the establishment of a new agricultural product portfolio
- Opportunity for the utilisation of specific agricultural areas and the extension of the scope of activities pursued by agricultural enterprises
- Advocating in local communities to increase renewable energy generation; establish wider acceptance of renewable energy generation as part of the efforts for sustainable development



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**Thank you for your
attention!**

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