The current and future role of biomass in DONG Energy
Thomas Dalsgaard, Executive Vice President, DONG Energy
March 27, 2012
DONG Energy at a glance
Financial overview 2011

RESULTS 2011

<table>
<thead>
<tr>
<th>Revenue</th>
<th>EBITDA</th>
<th>Profit for the year</th>
</tr>
</thead>
<tbody>
<tr>
<td>DKK 56.8 BN</td>
<td>DKK 13.8 BN</td>
<td>DKK 2.9 BN</td>
</tr>
</tbody>
</table>

CASH FLOWS FROM OPERATIONS: DKK 12.6 BN

NET INVESTMENTS: DKK 13.1 BN

RATING: A-/Baa1

MARKET SHARES

- Offshore wind in operation
  - Denmark: 45%
  - UK: 21%

- Electricity generation
  - Denmark: 54%

- Heat generation
  - Denmark: 35%

- Electricity sales
  - Denmark: 20%
  - Netherlands: 1%

- Gas sales
  - Denmark: 29%
  - Sweden: 22%
  - Netherlands: 1%

- Electricity distribution
  - Denmark: 28%

- Gas distribution
  - Denmark: 29%

Source: DONG Energy Annual Report, 2011
DONG Energy is converting plant portfolio to biomass and diversifying its asset base throughout Northwest Europe

- Increasing diversification across markets, fuels and technologies
- Integrated and balanced business model
- Risk mitigation through partnering
- Significant share of stable earnings

DONG Energy assets in Northwest Europe

- Continuous investments in E&P assets
- Various UK offshore wind farms under construction
- CCGT power plant in operation in 2011

Note: Green wind icons are wind farms in operations, blue under construction. Grey squares denote gas storage facilities. Grey circles denote various thermal power plants. Red circle denotes hydro plant. Blue areas and circles denote E&P activities. Source: DONG Energy
Meeting the environmental challenge: DONG Energy's 85/15 vision is to produce clean and reliable energy.

Vision: Clean and reliable energy

Fossil fuels

Green energy

2006

2040

Source: DONG Energy
Meeting the system challenge: More gas-fired and renewable energy capacity

638 g CO₂/kWh

Additional renewable production
Offshore Wind MW

Green conversion of fossil production

2010 2020

320 g CO₂/kWh
Heat and power consumption from biomass in EU is expected to double as part of EU 20-20-20 target in 2020

EU-27 final energy consumption from renewables (2020), TWh\(^1\)

<table>
<thead>
<tr>
<th>2007</th>
<th>Growth in energy from biomass</th>
<th>Growth in other renewable energy</th>
<th>2020 scenario</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>800</td>
<td></td>
<td>1.650</td>
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<tr>
<td>90</td>
<td>100</td>
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<td>310</td>
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</tbody>
</table>

1) Average of two scenarios: “EC proposal with RES trading” and “EC proposal with CDM and RES trading”

Source: Capros et al. (2008): “Model-based Analysis of the 2008 EU policy Package on Climate Change and Renewables”
A large-scale green conversion of DONG Energy’s Central CHP production in Denmark

Development in DONG Energy CHP portfolio in DK

- Fossil fuel (coal, gas, oil)
- Co-firing (coal and straw)
- Multi fuel (biomass, gas/coal)
- Planned conversion to biomass multifuel

Biomass conversion driven by:

- Demand for long term efficient and green supply of district heating
- Tax exemptions and premium for green power
- Uphold thermal capacity to deliver flexibility
Biomass conversion of DK power plants reduces dependency of coal and CO2 and contributes to 85/15 plan

More biomass and reduced use of coal

<table>
<thead>
<tr>
<th>PJ Fuel</th>
<th>2006</th>
<th>2010</th>
<th>2016*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coal</td>
<td>~6 mt</td>
<td>~4 mt</td>
<td>~1.8 mt</td>
</tr>
<tr>
<td>Biomass</td>
<td>~1 mt</td>
<td>~1.3 mt</td>
<td>~2.6 mt</td>
</tr>
</tbody>
</table>

Total DONG Energy CO2 emissions in DK
- 2006: 18 mt CO2
- 2010: 11 mt CO2
- 2016*: 5 mt CO2

*Conversions not decided and based on expected consumption, market prices and capacity development (Nov. 2011). This includes decision not to convert AVV2 to coal.
DONG Energy is developing sustainability criteria for wood pellets together with other large European energy companies

Participants (IWPB)

- DRAK
- RWE/Essent
- Electrabel (GDF Suez)
- Laborelec (GDF Suez)
- DONG Energy
- EON UK
- DELTA
- Vattenfall

- EU wood pellet consumption: 10 mn. tons (2010)
- Hereof industrial consumption: 4 mn tons
- IWPB have a market share of more than 70% of industrial pellets

Purpose

To remove barriers for trade with wood pellets through:
- Standard contracts
- Common specifications
- Common sustainability criteria

Sustainability

- Verification or certification
- 8 common principles for sustainability and criteria for compliance
Green growth with the intelligent use of biomass

- Small scale biofuel CHP
- Co-firing

- Multifuel on central plants
- Biogas

- 2. generation biomass (biofuels)

- 3. generation biomass (bio-refinng)

1990-

2000-

2010-

2015-
New Bio Solutions – High value energy from biomass

- 2nd generation bio-ethanol production based on agriculture residues
- Enzyme based separation of household waste for flexible and efficient energy utilisation
- Low-temperature gasification of low value biomass to high value energy products
Conclusions

1. Biomass to energy plays important role in current EU energy mix and share to increase in the future

2. DONG Energy conversion from coal to biomass to increase production of reliable and clean energy

3. A challenge in sourcing sustainable biomass for conversion from coal to biomass

4. Strategic objective of New Bio Solutions to develop world class utilization of low value biomass and waste