INTEGRATED NATIONAL NETWORK DEVELOPMENT PLANS

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## Infrastructure development – Roles and responsibilities

<table>
<thead>
<tr>
<th>Ministry of Climate, Energy and Utilities/Energy Agency</th>
<th>Energinet (TSO)</th>
<th>Danish Utility Regulator</th>
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</thead>
<tbody>
<tr>
<td>Full ownership of Energinet</td>
<td>TSO for gas and electricity</td>
<td>Economic regulation of Energinet</td>
</tr>
<tr>
<td>Approves Energinet’s investments</td>
<td>Network development plans and needs assessment</td>
<td>Monitoring and reporting on TYNDP and PCI</td>
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**New regulatory regime for Energinet by 2023**
- Long term development plan
- Business plan for electricity SO
How can regulation be conducive towards system integration?

**Challenges**
- Complexity and lack of level playing field
- Risk of stranded assets

**Solutions**
- Regulation of energy, irrespective of utility type
- Dynamic regulation:
  - Flexibility and swiftness in possibility to revise
  - Regulatory experiments within a given framework
  - Mutual understanding between NRAs and TSOs on roles and responsibilities without regulatory capture
THE ENERGY SYSTEM OF THE FUTURE
NEW REGULATION
NEW REQUIREMENTS
NEW DEVELOPMENT PLAN

- Energinet’s Long-Term Development Plan for Electricity and Gas
- Needs analysis and possible solutions
- 20 years outlook
- Danish Energy Agency Analysis Assumptions
- Stakeholder involvement led by Energinet
  - Including solutions by others
LINKING DEVELOPMENT PLANS TO INVESTMENT DECISIONS

• New challenges
  • Sector coupling, increased flexibility, digitalization, tariffs
• New players and stakeholders
  • Farmers, investors, industries, municipalities, neighbors
• Socio economical developments
  • Defines the evolution of the energy system
• Final investment decision by the Minister
BIOMETHANE INTEGRATION IN NETPLAN

Biomethane constitute up to 40% of consumption on daily basis and reached a total of 17% in 2020. The share will increase to 100% at the latest in 2040.

- Production into low pressure grid, remodeling of flow
- Alternative use of infrastructure (cost efficient)
  - Local island systems
  - Integration of distribution grids
  - Reversed flow to higher pressure
- Operational focus
  - Comparability to natural gas
  - Oxygen level, deodorization
UNLOCKING THE RES POTENTIAL

PtX development plan