



PBL Netherlands Environmental
Assessment Agency

IRENA LTES CEM WEBINAR

The role of scenario studies
in Dutch energy policy

20 december 2018 | Paul Koutstaal



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Content

- Dutch policy environment
- Role of scenario analysis
- Modelling challenges

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Dutch policy environment

- EU policies
 - Regulations and directives
 - Targets
- Ministries
 - Economic Affairs and Climate
 - Ministry of the Interior
 - Ministry of Infrastructure and Water Management
- Energy Agreement (2013) and Climate Agreement
 - Broad range of stakeholders
 - › Firms, business associations, network operators, NGOs, ministries, local government
 - Targets
 - Policy instruments



Climate agreement negotiations

- To be concluded this week
- Target for 2030: 49% emission reduction in 2030 relative to 1990 emissions
- Emission reduction target allocated over 5 tables
 - Electricity
 - Industry
 - Transport
 - Build environment
 - Agriculture
- 55% reduction target if the EU sets the same target
- Baseline scenario up to 2030 provided by PBL



Role of PBL

- Knowledge institute for the Dutch government
 - Focus on environmental issues, spatial planning and sustainable development
- Climate, Air and Energy sector
 - National studies
 - › Analysis of EU and government policies and agreements for the Dutch government
 - Emissions, energy use, renewable energy
 - Costs
 - CPB Economic Policy Analysis analyses the economic consequences
 - International
 - › Studies for, among others, IPCC and European Commission



Dutch National Energy Outlook

- Realizations and projections for energy use and emissions up to 2030 - 2035
- Modelling suite with supply and demand models
 - For example
 - › European electricity market model
 - › Model for electrical appliances
- Based upon
 - Two scenario's for the Netherlands
 - › Actual policies and measures in force
 - › Policies and measures which will definitely be implemented
 - Input from government and others on policies and measures
 - › Assessment of impact sole responsibility of PBL



Dutch National Energy Outlook (continued)

- One background scenario for developments abroad and fuel- and CO₂ prices
 - › In addition sensitivity analysis
- Results are the basis for policy adjustment and new policies
 - When targets are not reached
 - Ineffective policies
- Challenge for the government
 - How to deal with uncertainties and changing international circumstances?
- Climate law (under discussion in parliament)
 - 95% GHG reduction target for 2050
 - National Energy Outlook monitors progress

Modelling challenges

- System integration
 - Increased interactions between gas, heat and power
 - Demand response, power consumption increasingly function of (volatile) prices
 - Hydrogen
 - Examples from recent analysis
 - › Power to heat for industry in electricity market model
 - Either heat from gas or power, depending on relative prices
 - › Smart loading of electrical vehicles
- Impact of energy and climate policies on income distribution
 - Increasing attention for costs and distributional effects
- Modelling regional and local policies and measures

Modelling challenges (2)

- Industry
 - Electrification
 - New processes (e.g. hydrogen in steel production)
- Build environment
 - District heating
- Electricity sector
 - Decentralized power generation
 - Market driven endogenous investments in renewables
- Infrastructure
 - Electricity, gas
 - Optimal network extension
 - Investment costs

Transparency and legitimacy of modelling studies

- Mounting importance and impact of energy policies
 - Changes in energy use
 - › E.g. electrical or district heating instead of gas
 - Costs and distributional effects increase
- Stakeholders, government and parliament more closely scrutinize studies and outcomes
- Therefore more emphasis on transparency
 - Models
 - › Descriptions, possibly open source
 - › Review: articles, review processes
 - Input data transparent and public accessible
 - Involving stakeholders during and after studies



Thank you for you attention