



BASE

Baselines for **A**ccession **S**tates in **E**urope

POLAND

**National Electricity Sector
Baseline**

EC BRE C

Background in POLAND (1)

- The Polish national focal point is the JI Secretariat at the National Fund for Environmental Protection and Water Management
- Poland-Norway AIJ Projects (~40 projects)
 - coal-to-gas conversion
 - energy efficiency in new residential buildings
- Poland Netherlands AIJ/JI Projects
 - modernisation of district heating system - 2AIJ
 - Biomass district heating - JI
- Poland-Canada JI projects
 - Hydro power plant
- Few projects in preparation

Background in POLAND (2)

- Baselines have been calculated for individual AIJ/JI projects
- There no approved criteria for baseline application
- Some research has been carried out standardised baseline methodologies by CCAP and BASREC
- Electricity sector modelling has been carried out by PSE, ARE (using ENPEP), EC BREC (using SAFIRE) and EnergSys

Government Preferences

- In AIJ phase Polish criteria and procedures were used as example for other countries
- Main criteria for JI – www.climate.pl . Note: JI criteria will be updated?
- Poland is prepared for JI with administrative structure and theoretical knowledge.
- Lack of political decision
- Preferences: Energy efficiency and RES (biomass)

Model Selection

- SAFIRE is a well known model for forecasting RES scenarios in EU
- SAFIRE has been used for expertise work ordered by Ministry of Environment
- EC BREEC has a great deal of experience with the model
- SAFIRE can be used to determine the mix of electricity for each year (methodology matching supply to demand at least cost)

SAFIRE in Poland

Strategic Assessment Framework for the Implementation of Rational Energy

- **Country level**

- Teres II Study (1996)
- Scenarios for RE development in Poland (2000/2001)

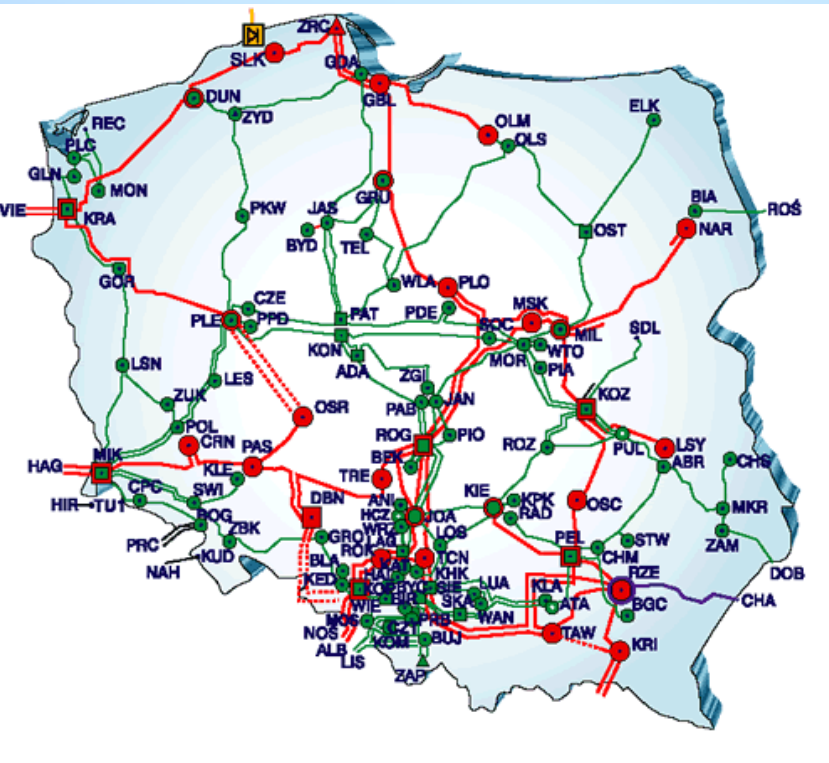
- **Regional level**

- Sustainable energy planning in Lidzbark Warminski (2001/2002)

Methodology Selection

- Average emission rate
 - electricity based mostly on coal
 - no nuclear plants, hydro <3%
- Marginal plant only
 - Least cost dispatch analysis, using SAFIRE

Overview of Electricity Sector



Generation: About 80 public power plants and CHPs, approx. 180 industrial CHPs

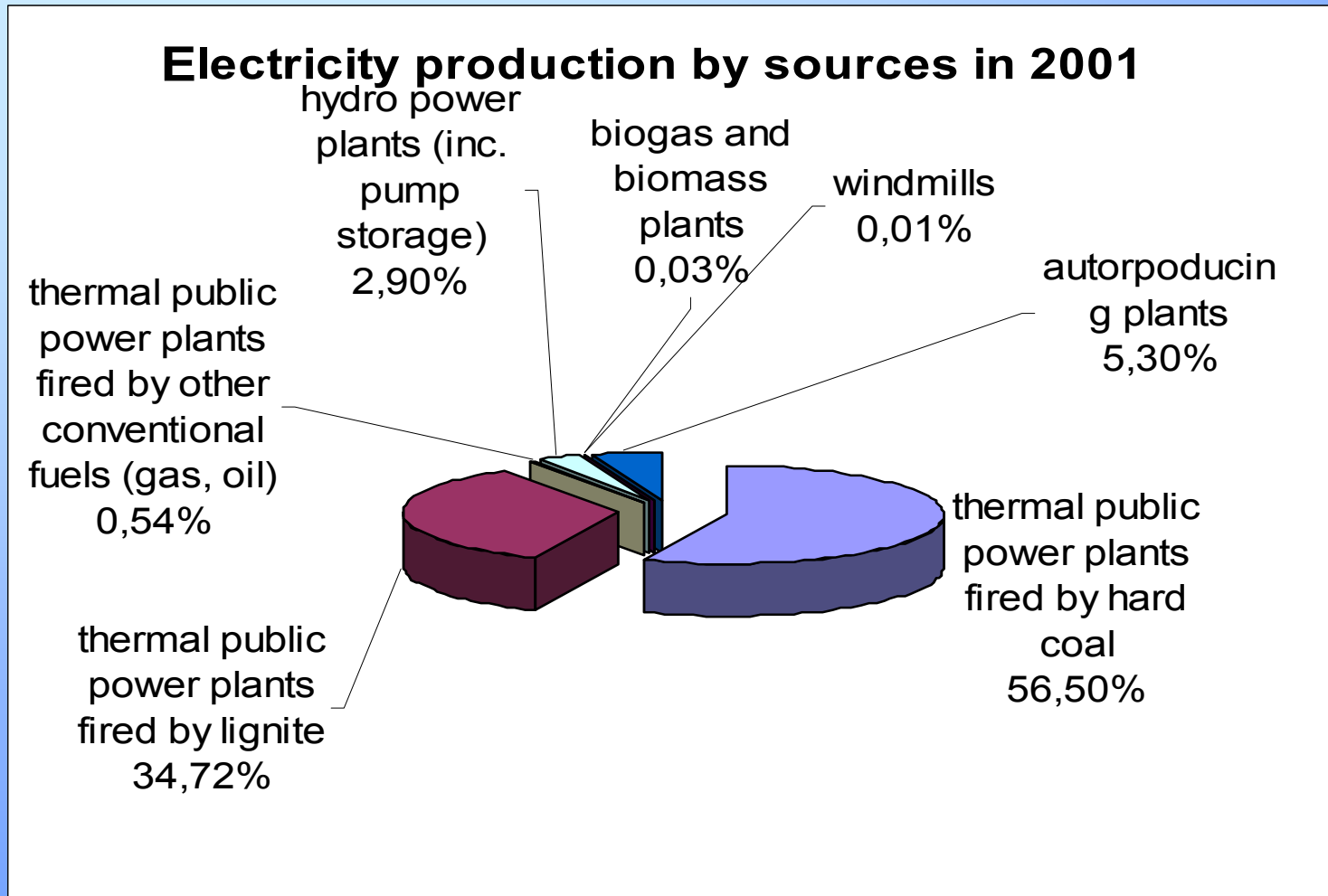
Transmission: PSE S.A., system dispatcher and wholesale trade according to long-term contracts

Distribution: 33 (to be merged into 7 companies)

Trading: 284 companies with trading license

Regulation: The Energy Regulatory Authority of Poland

Overview of Electricity Sector (2)



Overview of Electricity Sector (5)

- The Short-term priority is energy efficiency programme
- The longer term priority is renewables
- No target for CHP has been set
- There is a need for modernisation as old coal plant will be at the end of their lifetime around 2015
- Accession to EU and harmonisation with European Law (including the Directive on Renewable energy and other environmental regulation)

Baseline Scenario

- Political documents taken into account
 - ✓ **Assumptions for energy policy up to 2020**
 - ✓ **National environmental requirements**
 - ✓ **European accession requirements**
 - ✓ **National development plans**
- The forecast of future final energy consumption and the energy price growth per annum - prepared together with Institute of Power Engineering.
- The old steam power plants (based mainly on a coal and brown coal, 30% older than 30 years) should be reconstructed in near future.

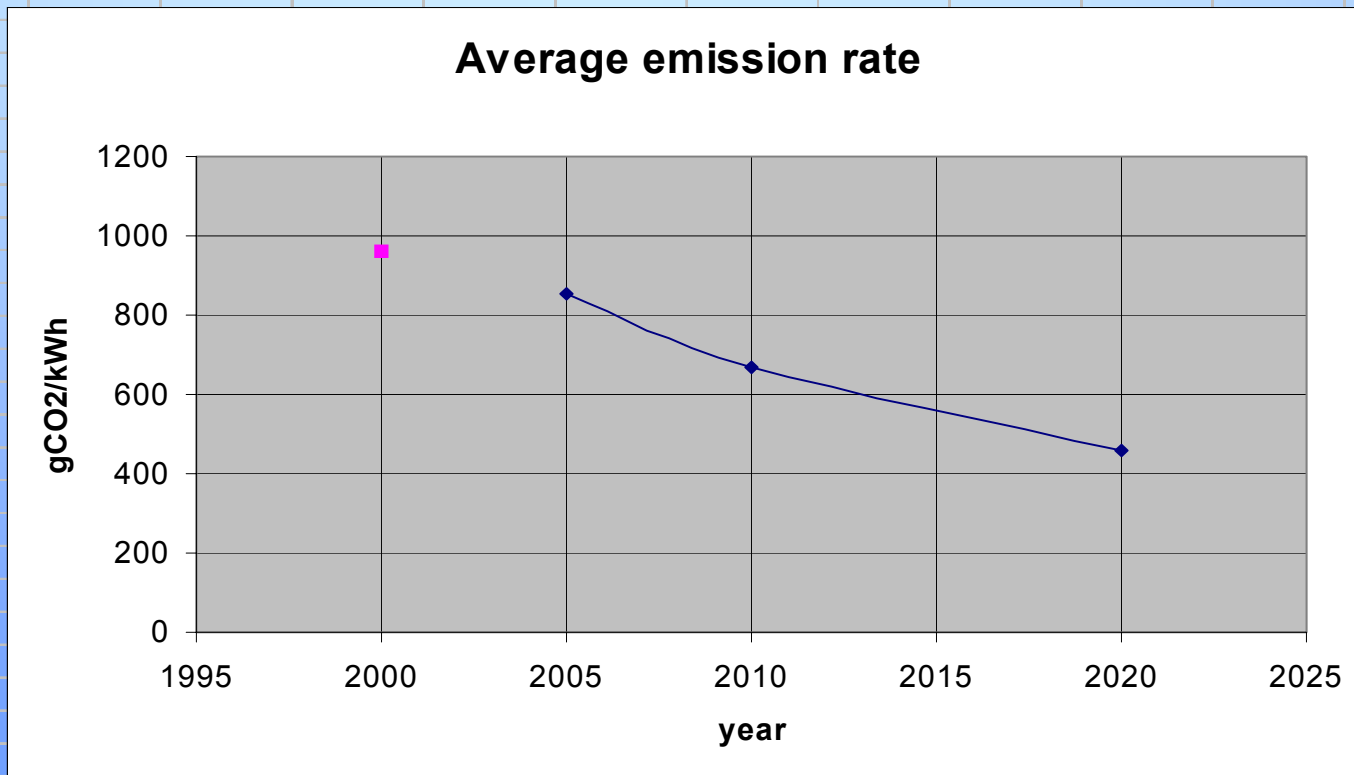
Baseline Assumptions

- New coal technology
 - New investment for old plant
 - Compliance with LCP Directive (2007)
- Energy efficiency
- Renewable target
- Increased gas consumption

Baseline Projections

Baseline Emissions Factors (gCO₂/kWh) – draft version

2005	2006	2007	2008	2009	2010	2011	2012
853	810	770	740	700	669	640	620



Validity and Update of Baseline

- The baseline could be valid to 2012.
- Preferred type – fixed dynamic
- At the end of 2003 National Climate Policy should be accepted as well as Renewable Energy Act. *Assumptions for Energy Policy up to 2020* are monitored and updated each two years (last update was in 2002), so the baseline scenario should be updated correspondingly.