

Promotion of Renewable Energy for Heating and Cooling

Conference

**“Perspectives for Renewable Energy Development -
Recent Findings from Germany”**

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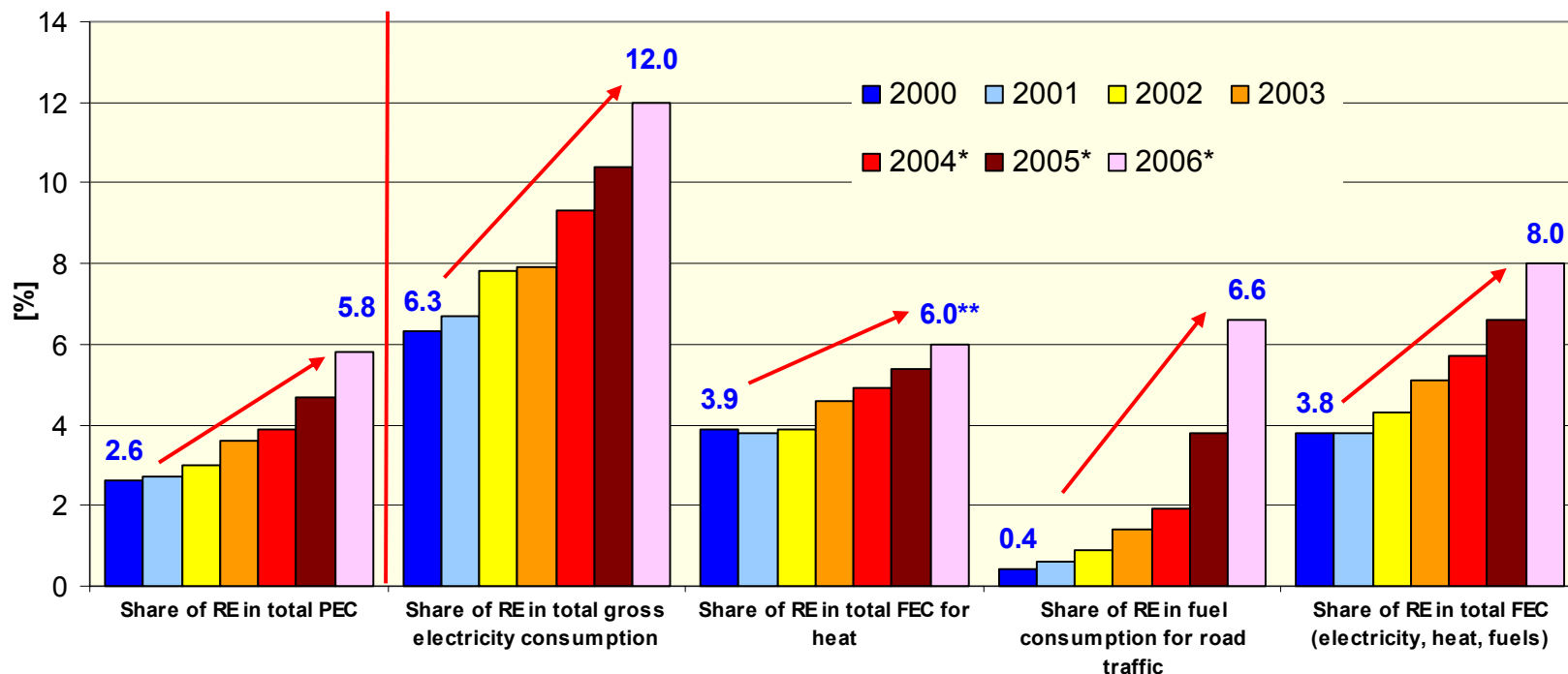
Contribution of RES to Heat Supply

**Contribution of renewable energy sources to heat supply
 in Germany 1990 - 2006**

	Biomass *	Biomass share of waste **	Solar thermal energy	Geothermal energy	Total heat generation	Share of total heat supply
	[GWh]					[%]
1990	k.A.	k.A.	130	k.A.	k. A.	k. A.
1991	k.A.	k.A.	166	k.A.	k. A.	k. A.
1992	k.A.	k.A.	218	k.A.	k. A.	k. A.
1993	k.A.	k.A.	279	k.A.	k. A.	k. A.
1994	k.A.	k.A.	351	k.A.	k. A.	k. A.
1995	k.A.	k.A.	440	1,425	k. A.	k. A.
1996	k.A.	k.A.	550	1,383	k. A.	k. A.
1997	45,646	2,900	695	1,335	50,576	3.2
1998	48,625	2,988	857	1,384	53,854	3.5
1999	47,811	3,140	1,037	1,429	53,417	3.5
2000	51,036	3,278	1,279	1,433	57,026	3.9
2001	52,043	3,283	1,612	1,447	58,385	3.8
2002	51,302	3,324	1,919	1,483	58,028	3.9
2003	62,555	3,806	2,183	1,532	70,076	4.6
2004	66,251	3,694	2,487	1,558	73,990	4.9
2005	72,190	4,692	2,828	1,601	81,311	5.4
2006	79,700	4,379	3,273	1,907	89,259	6.0

Contribution of RES to Energy Supply

Contribution of renewable energy sources to energy supply in Germany 2000 - 2006



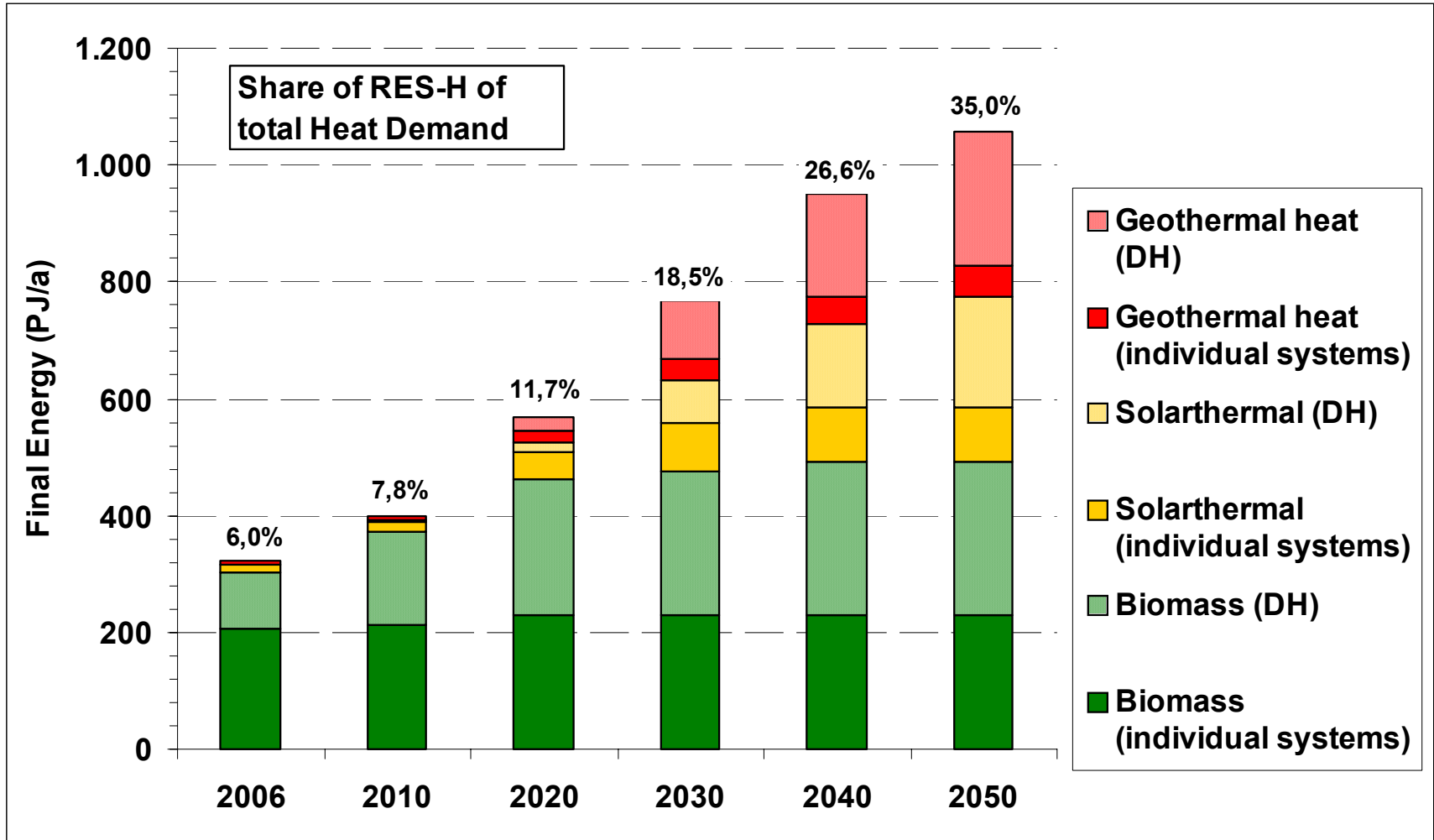
RE - renewable energies, PEC - primary energy consumption, FEC - final energy consumption

* All figures provisional

** From 2003, new data from the Energy Statistics ACT (EnStatG) incorporated

Source: BMU-Brochure "Renewable energy sources in figures – national and international development-" Version: June 2007

Long-term Goal for RES-H Market Development in Germany



Selection of Key Requirements for new RES-H Policy Instruments

- **Achieving of RES-H targets**
- **Setting incentives for**
 - supporting technology diversification
 - structural changes in the heating market (DH grids!)
 - RES-H penetration in the building stock
- **Securing stable and reliable support conditions**
 - in order to avoid stop-an-go development support should
 - either be independent from public budgets
 - or politically “stabilised”
- **Minimising transaction costs and risk of windfall profits**

Option 1: Installation Obligation with Compensation Charge (1)

- **Building owners are obliged to guarantee that a minimum share of their annual heat demand is supplied by RES**
(e.g. 15 % for new buildings, 10% for existing buildings)
- **The obligation becomes effective when the boiler is replaced (incl. the building stock!)**
- **Those who are not willing or are not in a position to fulfil the installation obligation have to pay a legally fixed compensation charge**
(which is also used to support RES-H appliances)

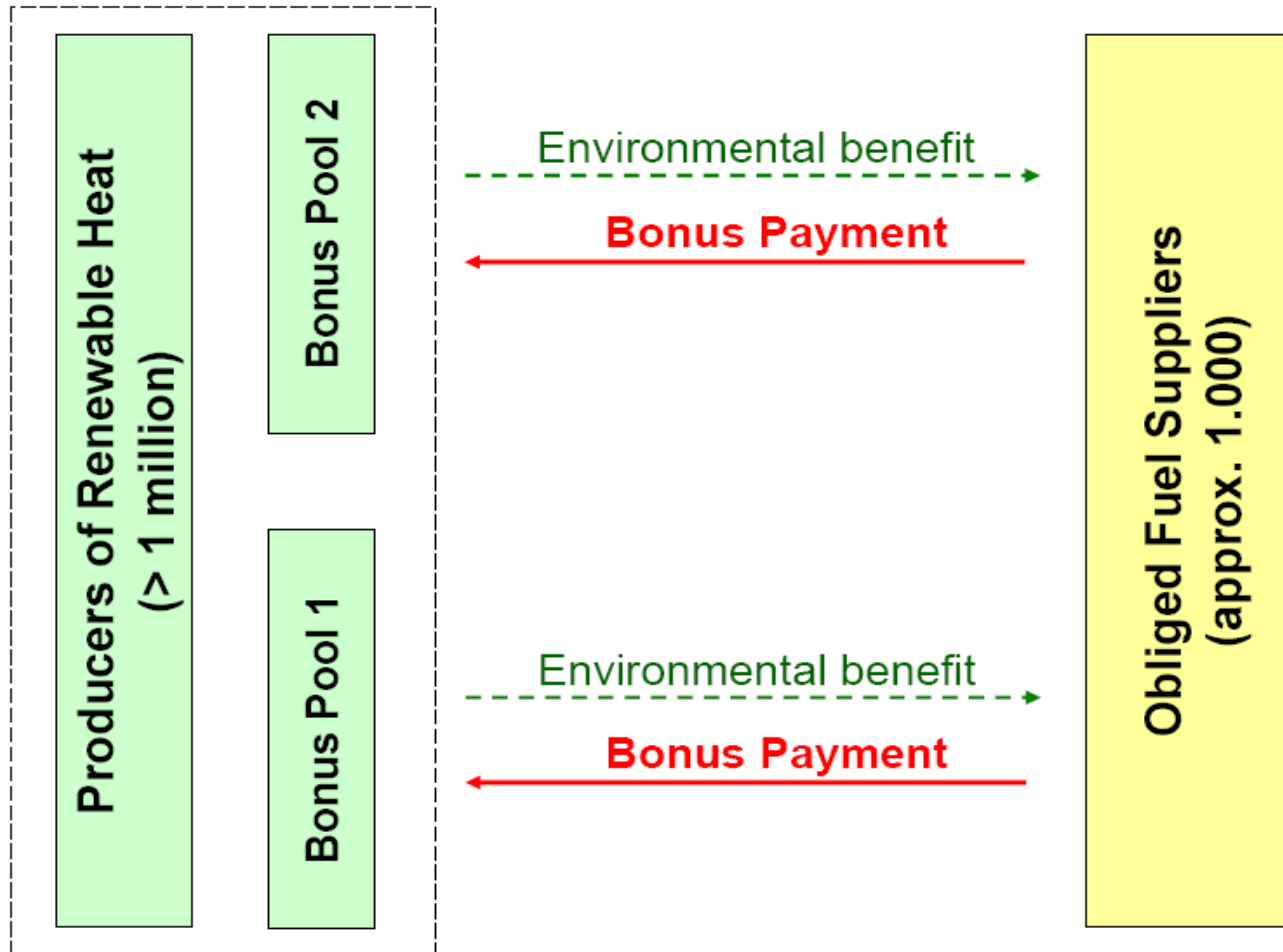
Installation Obligation with Compensation Charge (2)

- + **Model is easy to understand, comparable obligations are known from the building sector (building standards)**
- + **Experiences with Installation Obligations e.g. in Spain (national, local) and Israel**
- **Low economical efficiency** (lack of incentives to install RES-H devices where it is deemed most profitable)
- **Little incentives to create sustainable structures** (e.g. district heating networks)
→ **necessity of accompanying measures**

Option 2: Bonus Model (1)

- **The bonus model concept involves major elements of a classic feed-in scheme** (well known from the RES-E sector)
- **RES-H operators are entitled to receive a legally fixed bonus payment per kWh of heat produced and used**
- **Bonus level can easily be adapted and periodically adjusted to the specific needs of the different RES-H technologies**
(e.g. special incentives for the implementation of grid based heating systems)
- **Key design element: Organisation of the relationship between the beneficiaries and the obliged parties**
(e.g. Which party to oblige?, Aggregation of bonus claims)

Principle Architecture of a Bonus Model (2)



Bonus Model (3)

- + Fixed long-term boni ensure a high degree of investment security**
- + Model can be designed as to provide incentives for structural goals**
(e.g. technology diversification, expansion of DH systems)
- + High economical efficiency**
(incentives to locate RES-H devices where it is most profitable)
- Communication challenge:**
The concept is rather new and seems to be rather complex, up to now there has been limited discussion on such a new model

Current State of the Debate

Federal Government published a proposal for a Renewable Heating Regulation in 12/2007 with the following key elements:

1. Installation Obligation for new buildings

- Solarthermal: $\geq 0,04 \text{ m}^2$ per m^2 heated space (corresponding to solar coverage of approx. 15%)
- Biomass/Geothermal: $\geq 50\%$ of annual heat demand
- Biogas restricted to CHP, Biofuels restricted to condensing heating technology

2. Increased Market Incentive Program (investment grants)

- 350 Mio EUR in 2008 and
- 500 Mio EUR/a in 2009-2012

Thank you for your attention

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