Klimaschutz- und Energieagentur Baden-Württemberg GmbH

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Experiences with the renewable heat law (EWärmeG) Baden-Württemberg

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Brussels, 27 february 2015

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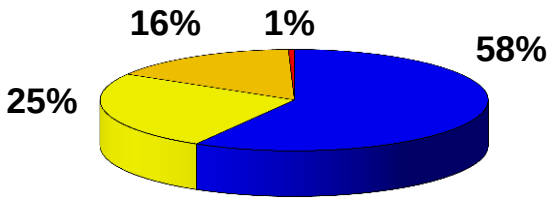
The state energy agency since 1994



- state of Baden-Württemberg
- VfEW
- GbR 3 (associations, organisations..)
- nature conservancy association

Work at the state's climate protection policy by supporting municipalities and enterprises in their efforts to

- save energy
- use renewable energies
- use energy rationally

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Structure of heat laws in Germany

- Baden-Württemberg‘s (state‘s) EWärmeG between 1.4.08 und 31.12.08 for new residential buildings
- Deutsches (federal) EEWärmeG since 1.1.2009 for all new buildings
- Baden-Württemberg (state‘s) EWärmeG since 1.1.2010 if boiler in residential building will be replaced.
- Amendment to (state‘s) EWärmeG probably from 1.7.2015: all existing buildings: 15 % renewable energies

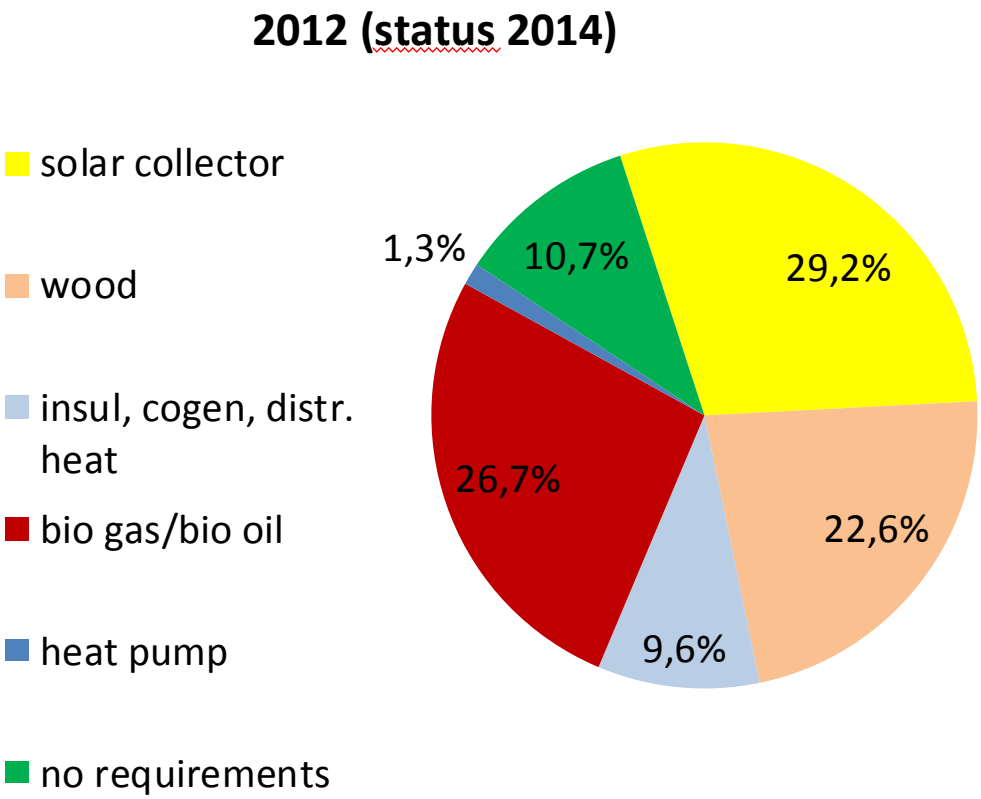
existing residential buildings

requirements to use 10 % renewable energies
if the boiler will be replaced

- 0,04 m² solar collector per m² floor space
- Heat pump To cover the total heat demand JAZ > 3,5
- Wood boiler (pellets, wood chip or logs)

  Wood stove only, if ¼ of floor space is predominantly heated with wood or stove with heat exchanger
- 10 % bio gas or bio oil
- substitute: Insulate roof or facade!
- or cogeneration with 70 % eff.
- or connect to district heating
- or roof covered with PV

Choices of house owners?



acceptance of the law

- energy agencies: customer neutral
- customer cannot accept, that law only valid for residential buildings
- explicitly accepted of associations of crafts
- In general accepted by experts („Sachkundige“) They have to explain the law to customers

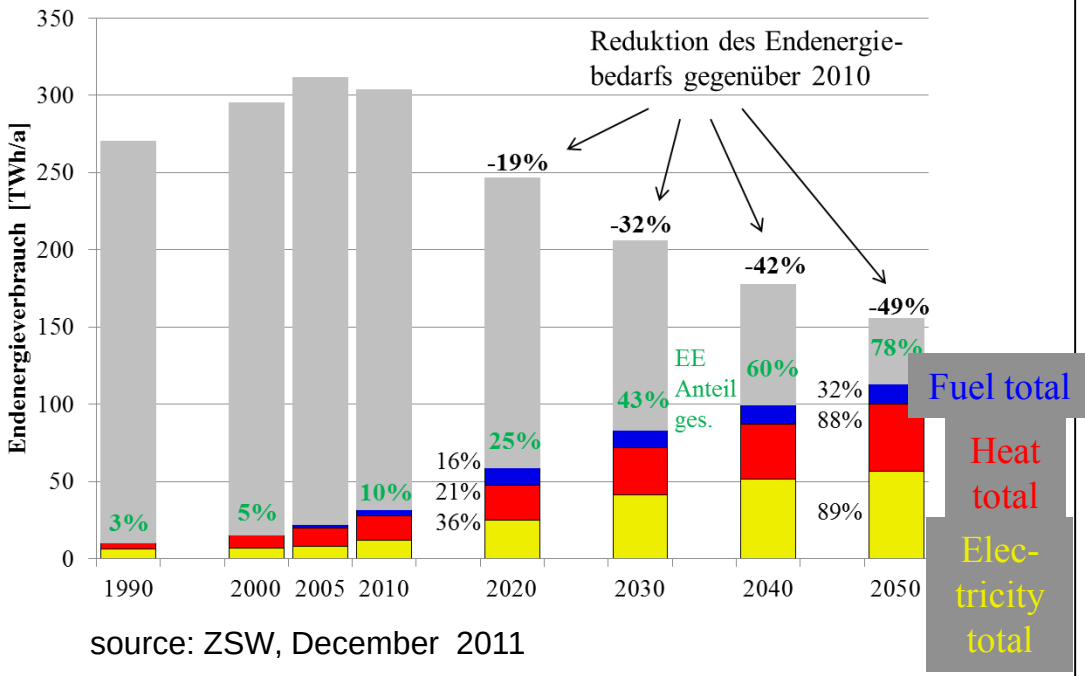
But:

- Many customers are not informed
- confusion about the multitude of laws: EWärmeG, EEWärmeG, EnEV
- Even craftsmen have knowledge deficits

source: eza!

Why an amendment?

- „Energiewende“ and targets concerning climate protection:
  - until 2020 CO_2-reduction by 25 %
  - until 2050 CO_2-reduction by 90 % (baseline is 1990)
- More than 40 % of final energy used for heating and hot water causing 30 % of CO_2-emissions
- Baden-Württembergs climate protection law :
  - binding CO_2 reduction targets (§ 4)
  - introduce implementation measures (IEKK), i.e amendment to EWärmeG



source: ZSW, December 2011

Cornerstones of amendment

- simplified enforcement
- increased requirements of 15 % RE (instead of 10 %)
- no anker technology solar thermal system
- include office and other non residential buildings
- increased requirements for the use of biogas
- new option: retrofit strategy „Sanierungsfahrplan“
- allow combinations

What will be new for residential buildings?

- an energy audit leading to a retrofitting strategy will be accepted equivalent to 5 % RE
- bio gas max. 10 %, max. 50 kW
  only in condensing boiler
- bio oil 10 % in condensing boiler
- insulation of basement as aditional option
- PV as additional option (0,02 kWp/m^2 floor space)
- simplification for small cogeneration units

Requirements for non residential buildings (NWG)?

- exeptions along § 4 EEWärmeG/ § 1 Abs. 3 EnEV (i.e. for religious buildings, buildings for production/storage/assembly) heated to less than 12 °C
- options equivalent to residential builds plus heat recovery for ventilation systems
- no bio oil, no wood stove
- retrofit strategy (SFP) which includes building envelope, heating system, ventilation, cooling, lighting is equivalent to 15 % RE



Excel-tool to show the options

tool

Wohngebäude

Das erneuerbare Wärmegesetz verlangt, dass nach Austausch der zentralen Heizungsanlage 15 Prozent des Wärmeenergiebedarfs aus erneuerbarer Energie erzeugt oder Ersatzmaßnahme ergriffen werden.

Erfüllungsoptionen			Erfüllungsgrad				
Solarthermie	Flachkollektoren				21,00 m²		34,97%
Holz-Zentralheizung					0,00 kWh		0,00%
Biomethan	Nein	50,00 kW			0,00 kWh		0,00%
Bioöl	Nein				0 l/Jahr		0,00%
Wärmepumpe	Elektrisch betrieben	4,00			0,00 kWh		0,00%
Einzelraumfeuerung	Bitte wählen ...	80%		Nein	0,00 m²		0,00%
Dachdämmung	0,00 m²	0,00 m²		Nach 30.6.2015	500,00 m²	20,00 m²	0,00%
Außenwanddämmung		100,00 m²			0,00 m²		0,00%
Kellerdeckendämmung						Ja	66,66%
Gesamtnachweis Gebäudehülle						0,00 HT`	0,00%
Sanierungsfahrplan						Nein	0,00%
Kraft-Wärme-Kopplung		Bitte wählen ...				0,00	0,00%
Anschluss ans Wärmenetz						Ne	0,00%
Photovoltaik						0,00 kW	0,00%
							100%

Sanierungsfahrplan
Wird für das Gebäude ein Sanierungsfahrplan erstellt?

Results of the renewable heat law

- leads to additional use of RE for heating
- leads to a discussion about the most effective way to reduce CO_2-emissions
- can be implemented with reasonable additional cost
- needs intense communication
- needs well informed craftsmen
- Includes opportunities for vrious crafts (facade, roof, heating)
- there is a good solution for each building