Biomethane roadmap for Austria

BIOMETHANE WS: Budapest 13.07.2017

[Franz Kirchmeyr, Austrian Compost & Biogas Association]

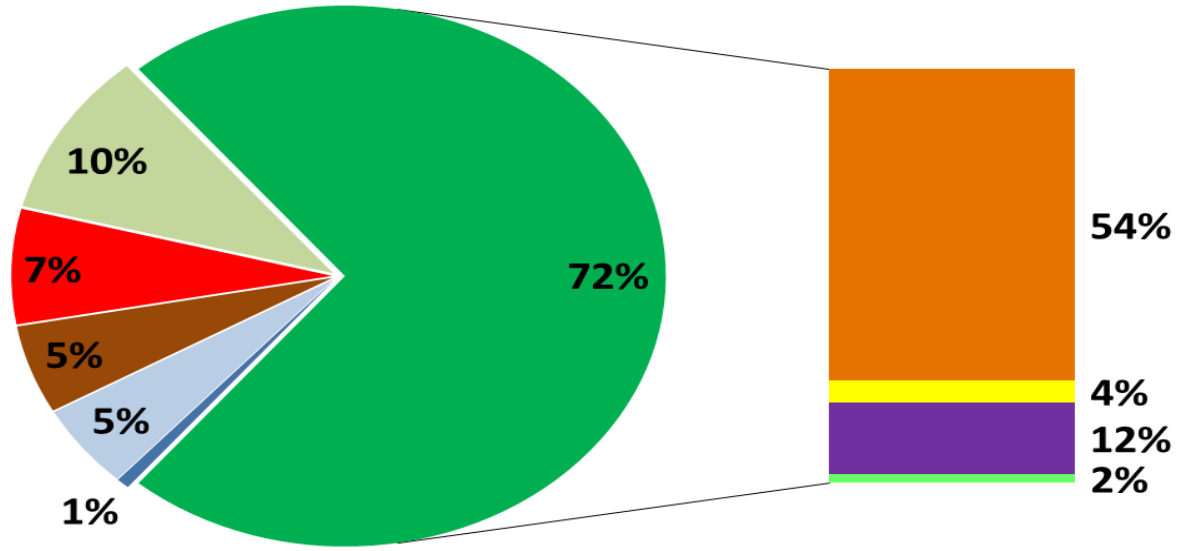
This project has received funding from the European Union's Horizon 2020 research and innovation programme.

Developement of biogas and biomethane in Austria

- CHP
  - ~ 290 plants producing electricity and heat
  - ~ 550 $GWh_{el.}$ + 300 $GWh_{th.}$
- Biomethane production
  - 14 plants have installed an upgrading system and connection to the gas grid
  - ~ 2500 m³ installed capacity
  - ~ 15 Mio Nm³ biomethane
- One new plant is running to treat spent grain and produce steam and heat

This project has received funding from the European Union's Horizon 2020 research and innovation programme.

Share of currently used feed stock



This project has received funding from the European Union's Horizon 2020 research and innovation programme.

Amendment of renewable energy act in June 2017: Post feed in tariff for existing plants

- ~ 2/3 of existing plants may receive post feed in tariff at first stage for 3 additional years – then further negotiations are needed
- preconditions
  - Remote control avoiding grid overcapacity
  - Energy efficiency: > 60 % (electricity and heat)
  - Feedstock: max. 60 % corn and cereals (mass balance)
- Selection of most efficient plants
  - Via energy efficiency (from 2016) + Full load hours (average: 2010 - 2016)

➔Government wants to keep only most efficient plants in operation which are willing to reduce corn and cereals as main feedstock

This project has received funding from the European Union's Horizon 2020 research and innovation programme.

Amendment of renewable energy act in June 2017: new plants

- preconditions
  - Remote control avoiding grid overcapacity
  - Feedstock: max. 30 % corn and cereals (mass balance)
- Two options
  - Plants smaller 150 kW el. With direct CHP + Energy efficiency: > 67,5 % (electricity and heat)
  - All bigger plants only with upgrading, grid injection and electricity production after transport via official gas grid

➔Only small plants shall have the CHP directly at the plant and support grid stability

➔Due to expected huge increase of electricity from wind and solar bigger biogas plants shall inject to gas grid, gas grid used as efficient storage and the conversion to electricity “shall happen when other renewables cannot secure demand”

This project has received funding from the European Union’s Horizon 2020 research and innovation programme.

Austrian Gas sector wants biomethane

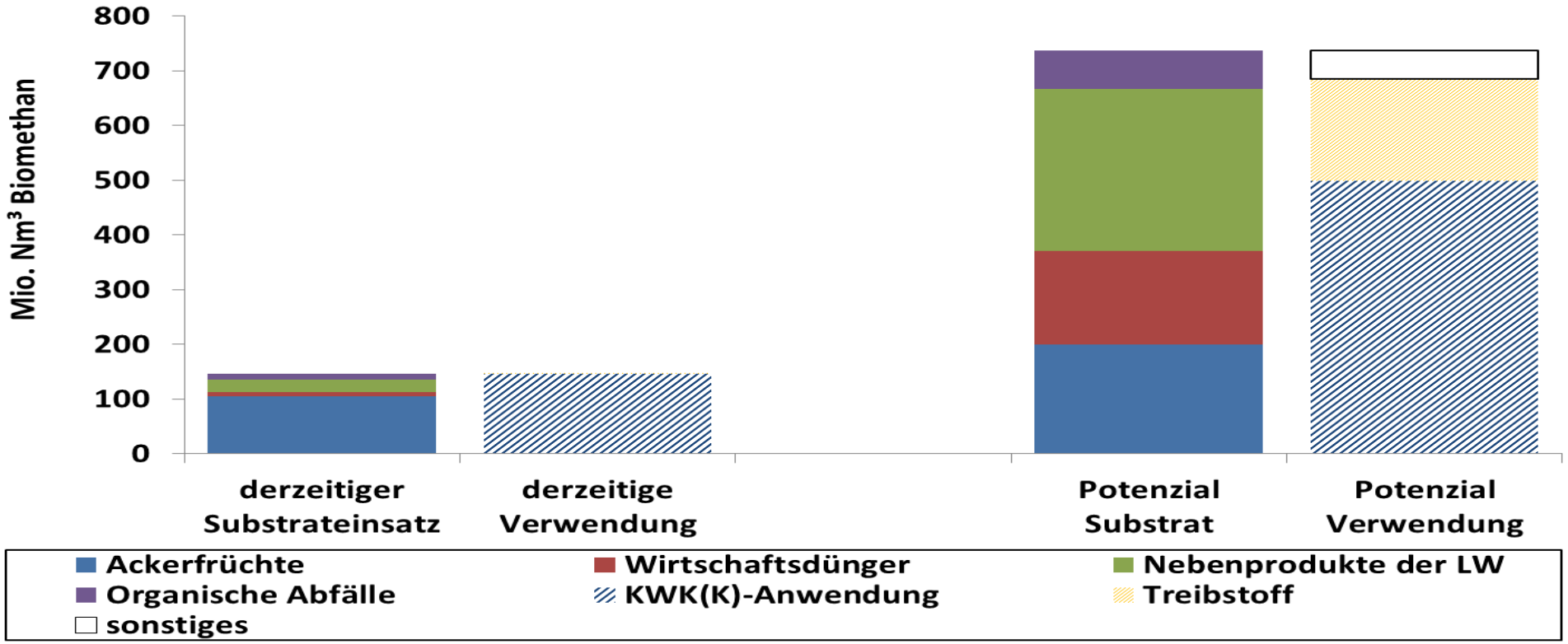
- Natural Gas sector of Austria recently launched the will to use 2 billion m³ biomethene
-

theoretical potential of biomethane in Austria	[m³ CH_4]
straw and other agricultural residues	320
manure	170
organic waste from industry	270
garden waste	100
organic waste from households	550
sewage sludge	90
Power to Gas	500
sum	**2.000**

- Currently gas demand: ~ 8 billion m³
- Size of plants should be around 1000 m³ biomethane
- Most of biomethane should be used for heating

This project has received funding from the European Union's Horizon 2020 research and innovation programme.

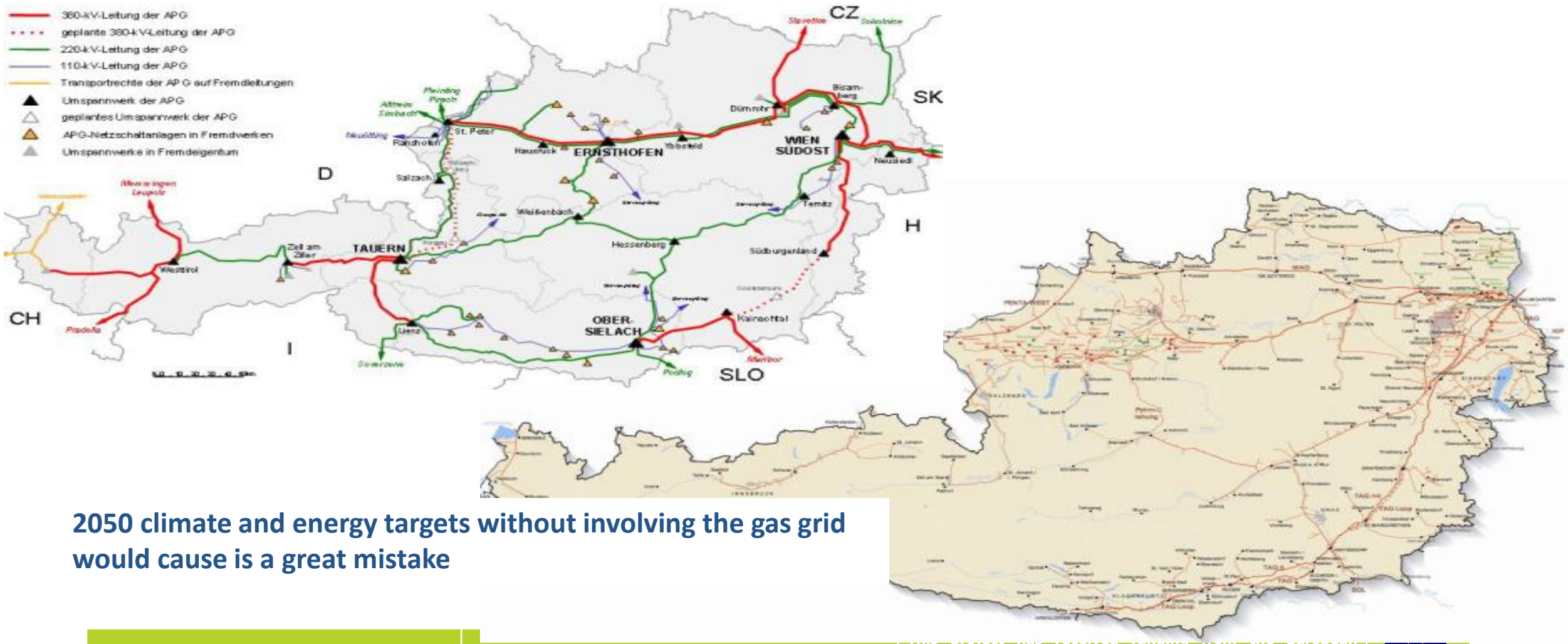
Currently used feed stock versus potential (useable potential in neer future)



Biogas as key technology using the left overs from previous production steps as food, feed or chemistry production and organic waste

This project has received funding from the European Union's Horizon 2020 research and innovation programme.

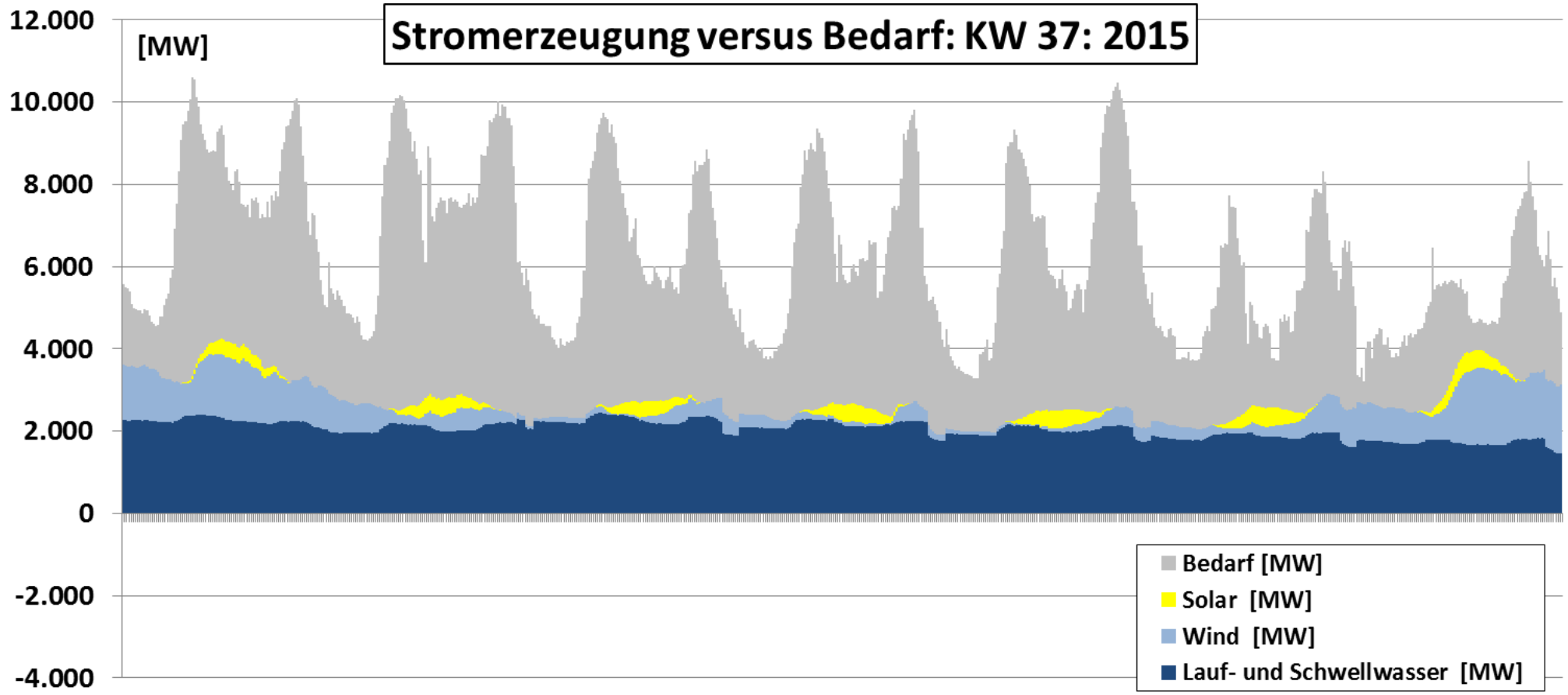
Fortunately we have two very good developed energy grids: Power and gas grid



2050 climate and energy targets without involving the gas grid would cause is a great mistake

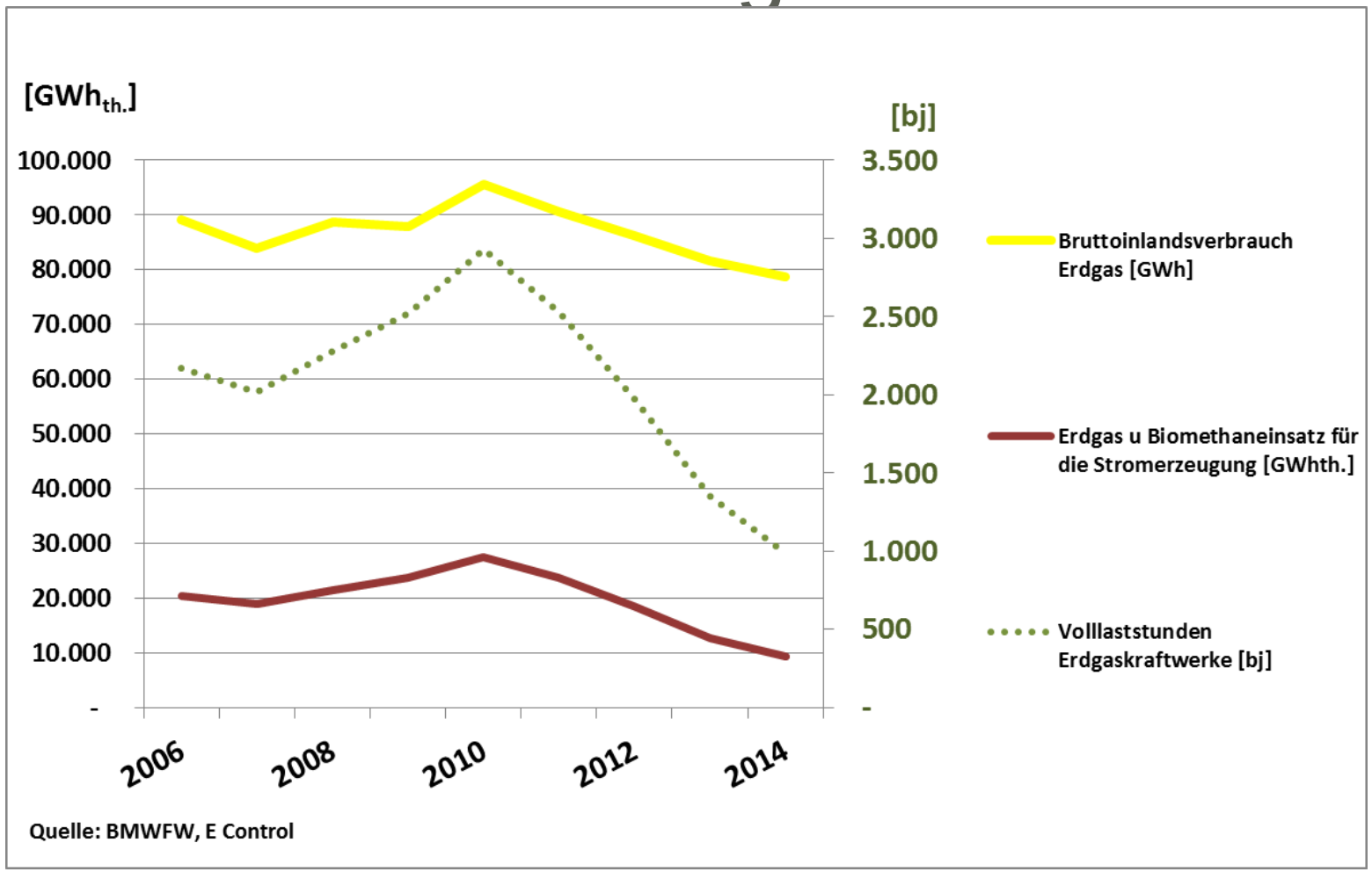
Union's Horizon 2020 research and innovation programme.

Electricity production versus demand



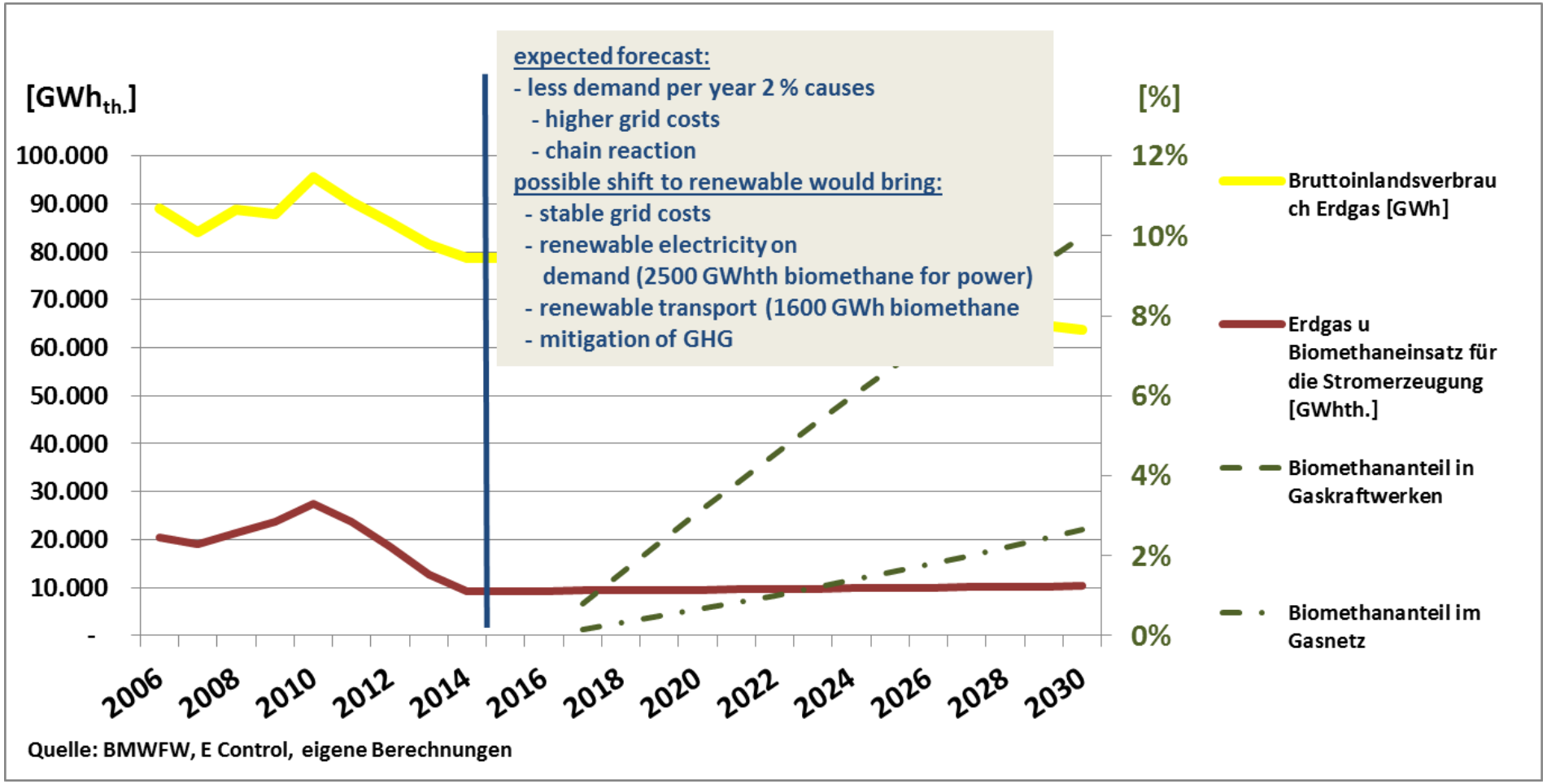
This project has received funding from the European Union's Horizon 2020 research and innovation programme.

Demand and electricity application of natural gas



This project has received funding from the European Union's Horizon 2020 research and innovation programme.

Possible actions creating a win win situation for the gas grid



This project has received funding from the European Union's Horizon 2020 research and innovation programme.

Current situation - Challenges

- Change in used feedstock with a big potential from non food/feed sources
- We expect a further technology jump of the technique
- Current energy situation is not a driver for further development
- Good cooperation between biogas and natural gas stake holders
  - Further agreements achieving launched goal are needed
  - Commitment for different applications

This project has received funding from the European Union's Horizon 2020 research and innovation programme.

Thank you for your attention!

Austrian Compost & Biogas Association

Franz Kirchmeyr

kirchmeyr@kompost-biogas.info

This project has received funding from the European Union's Horizon 2020 research and innovation programme.