### The plan of coal phase-out in Berlin and the role of local government



#### Energy transition in Germany

- Germany has a long tradition in non-governmental ener gy movement
- It dates back to the 1970s where the anti-nuclear move ment started
- The first pioneers of renewable energy came from this movement
- The renewable energy law from 2000 with the feed-in ta riff was the important breakthrough
- 50% of the installed renewable power plant is own by private people
- Actually the movement focus on the coal phase out as t he logical next step

#### Energy transition in Berlin

- The share of renewable energy for Berlin was 2014 at 2, 2%
- Though there are numerous concept, Berlin is still last in renewable energy rankings compared to other federal st ates or large cities
- large energy movement campaigns that started in last y ears changed energy po
- in Berlin
- One focused on the
- coal phase out



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# New federal state government r2g



#### Agenda of r2g

- Berlin has to be a pioneer in climate protection and the energy transition especially in urban areas
- The overall goal is the CO<sub>2</sub> free city in 2050
- Community-owned companies (energy, housing) play
- a major role
- Coal phase out has to completed by 2030
- Citizens participation in form of co-op or in the decision making process is wanted
- Broad transparency rules are crucial for the Berlin citize ns to participate in this process

#### Goals of r2g

- Energy distribution grids are infrastructures of general in terest and should be under public control
- The co-op BürgerEnergie Berlin should be apart from th e municipal company BerlinEnergie stakeholder of the gr id operation company
- This ensures that citizens participation is introduced

#### Goals of r2g

- Berliner Stadtwerke should be the driving actor for the E nergiewende and climate protection in Berlin
- It has to provide electricity and heat exclusively from ren ewable resources
- Further tasks are
  - Self consumption models for tenants
  - Energy counselling especially for low-income househo lds
  - Fighting energy poverty
- On the long term it has to remain a 100% municipal-ow ned
- Provide financial resources of 100 150 Mio Euro in 5 years

## Coal phase out in Berlin



#### Coal power plants in Berlin

Klingenberg - 164 M W Lignite & Gas (1,3 Mio. t CO<sub>2</sub>)

Moabit - 140 MW -Coal & Biomass

Reuter C − 160 MW Coal & Biomass

Reuter West - 564 M W Coal (2,5 Mio. t CO<sub>2</sub>)



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#### Goals of r2g

- First federal state in Germany that initiates the coal phas e
- Last lignite power plant is shut down in 2017
- Three remaining coal power plants will be taken of the g rid before 2030



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#### Policy process of coal plant shutdown

- Definition of the coal phase out by law in the law providi ng guideline Berliner Energiewendegesetz
- Road map will be worked out with the coal power plant operator and all relevant stakeholders and the citizens o f Berlin
- Introduction of CO threshold value for district heat fuels in a federal state Renewable Energies Heat Act

#### Proposal of citizen participation



#### Challenges of coal phase out in Berlin

- 30% of Berlin's heat demand is provided by Germanys I argest district heat system
- 90% of the heat is produced by fossil fuels
- All coal power plants in Berlin run for the district heat sy stem







#### Challenges of coal phase out in Berlin

- How to replace the heat demand by renewables?
- •
- 1. Replace fossil fuels by renewables e.g. power to x
- $\rightarrow$  Increase of demand of energy
- 1. Problem: no effect on climate change if energy is provided by coal power plants outside Berlin
- 2.2. Reduce amount of energy consumption (energy efficiency)
- 3.  $\rightarrow$  Increase of insolation of houses
- 4. Problem: rent increasing as a consequence might cause social imbalances

#### Challenges of coal phase out in Berlin

3. Open the district heat system for decentralised feed i
n especially for waste heat
→ lower the temperature in the district heat system
Problem: Berlin has no industry with high amount o
f waste energy
4. Replace coal power plants by gas power plants
→ NO OPTION: CO emissions of gas is significant
lower than coal. H@wever gas power plants would l
ead to a new log-in

#### Summary

- Berlin will become the first federal state that initiates the coal phase out by law
- Together with the operator Vattenfall we will work out a r oad map
- The question of how the fossil heat can be replaced by renewables is still under discussion
- Further efforts to rise the amount of renewable energy p roduction and energy efficiency in Berlin accompany the coal phase out process

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