PROSPECT2030 final conference | 30/11/21

Insights from our pilot regions: Saxony Anhalt

PROSPECT2030 | HSMD| Dr. P. Lombardi, Prof. P. Komarnicki

Regional basics

Energy system baseline

Action plan

Scenario 2030

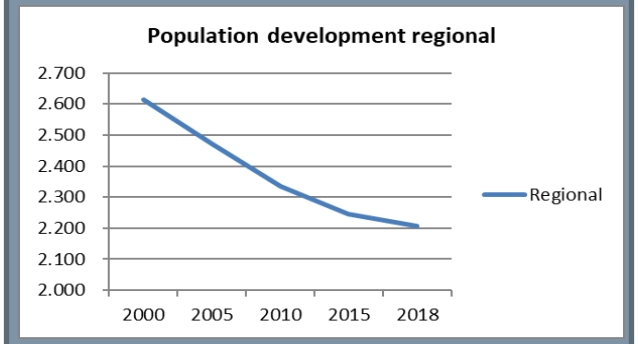
Chances and challenges

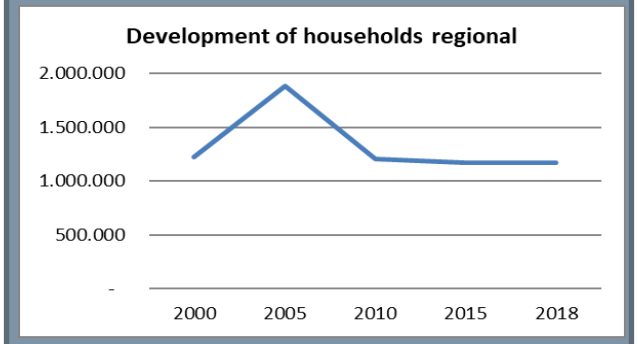
REGIONAL BASICS

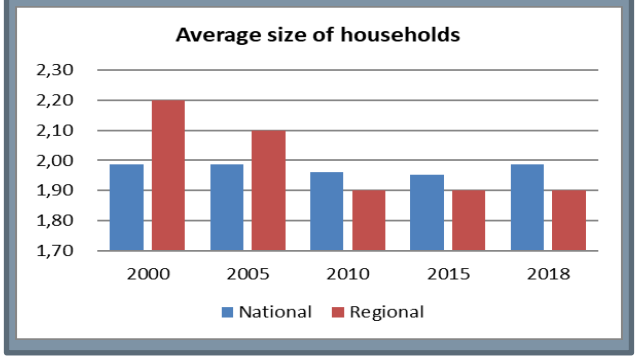
218 municipalities

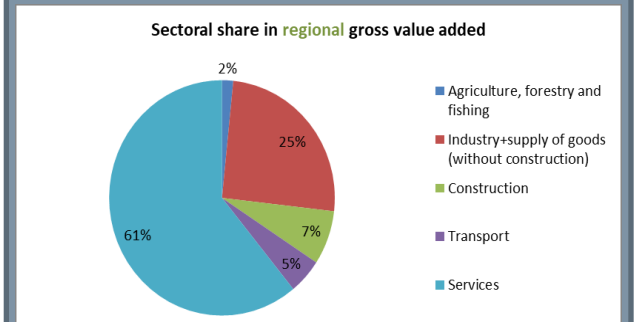
2.208.300 inhabitants – decreasing population

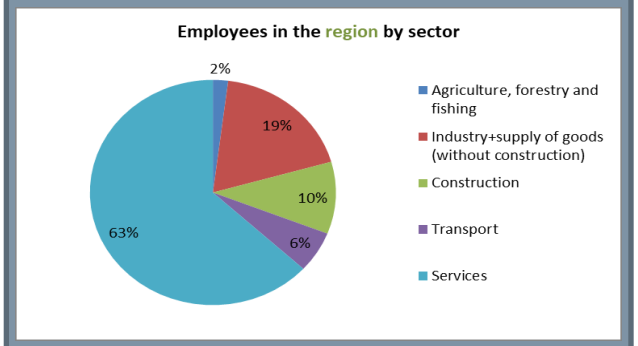
Cities larger than 50.000 inhabitants:3 (Magdeburg, Halle and Dessau-Roßlau)

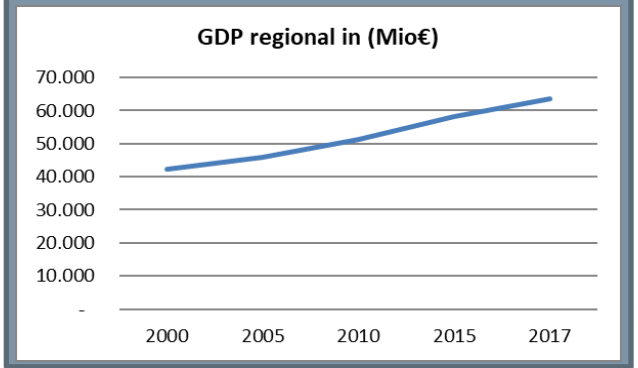




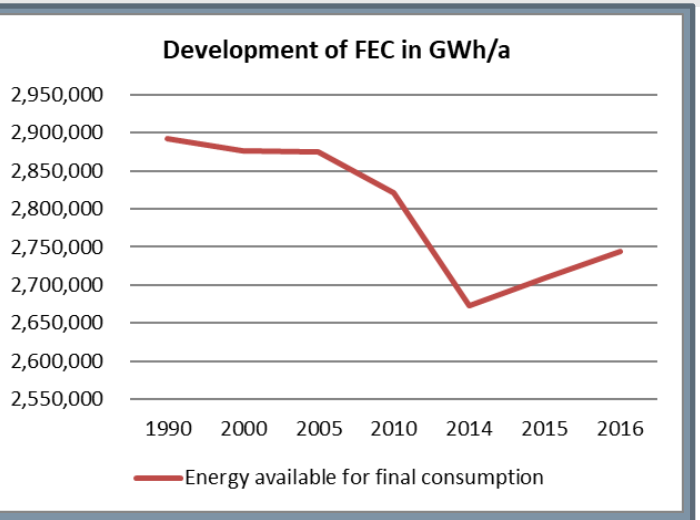


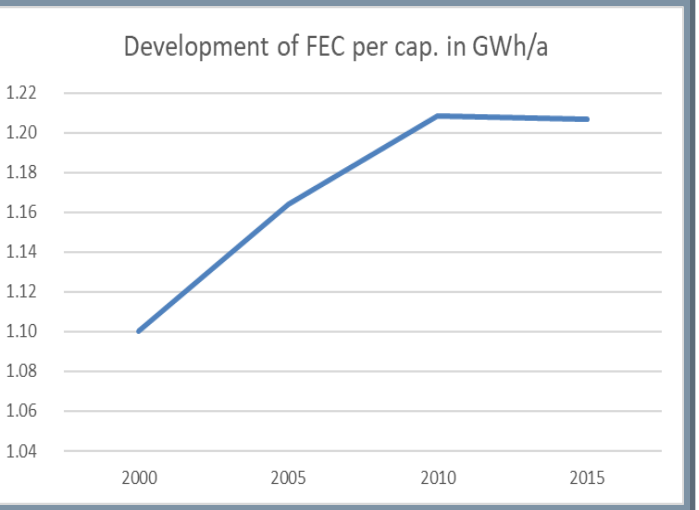


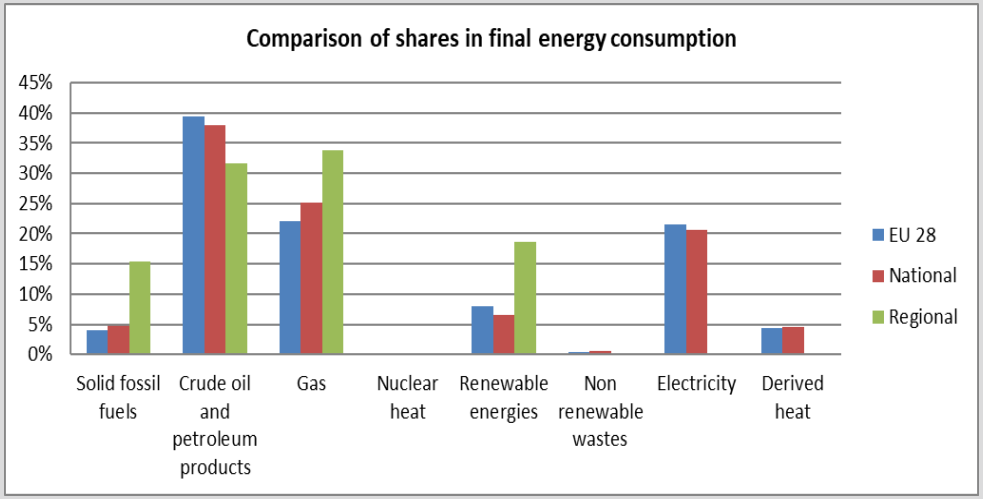


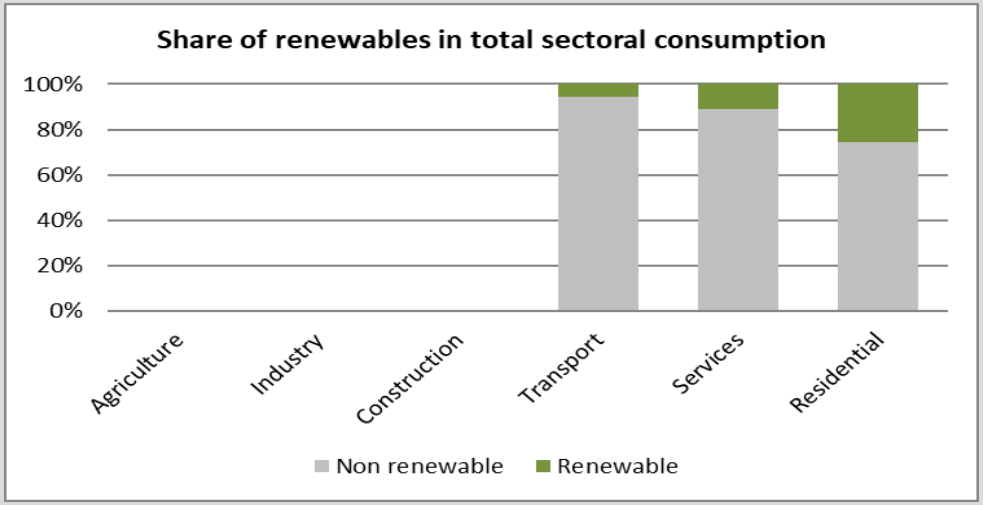


ENERGY SYSTEM BASELINE









In 2016 CO2/per cap. 13.9 Tons

ACTION PLAN

1. Better integration of the local population in projects

2. Better incentive support for the project instead of bureaucracy

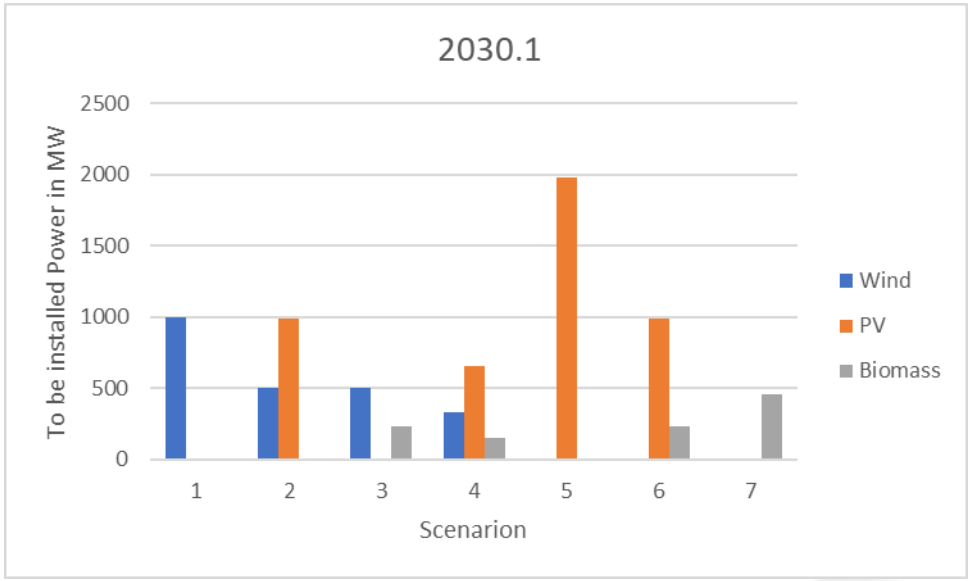
3. 1 GW Electrolyzer for green H2 production

4. Extension of existing H2 grid

SCENARIO 2030 1/2

- Switch off Coal Power Plant Düben (67 MW)
- Electrification of heat not generated by the coal power plant
- Electrification transportation sector (25%)

¤	Missing·electricity·generation·in·MWh¤	Missing·thermal·generation·in·MWh¤	New·electricity·demand·for·driving·electric·power·in·MWh¤	New·electricity·demand·for·suppling·25%·of·mobility·in·MWh¤	Additional·amount·of·electricity·to·be·supplied·in·MWh¤
Coal·power·plant·Deuben¤	427.980¤	¤	¤	¤	¤
Coal·for·heating·room·purposes·in·residential·and·service·sectors¤	¤	320.278¤	¤	¤	¤
Electric·driven·heat·pump¤	¤	¤	91.508¤	¤	¤
Electric·mobility¤	¤	¤	¤	1.214.630¤	¤
Electricity·to·be·generated·by·RES·based·technologies¤	¤	¤	¤	¤	1.734.118¤



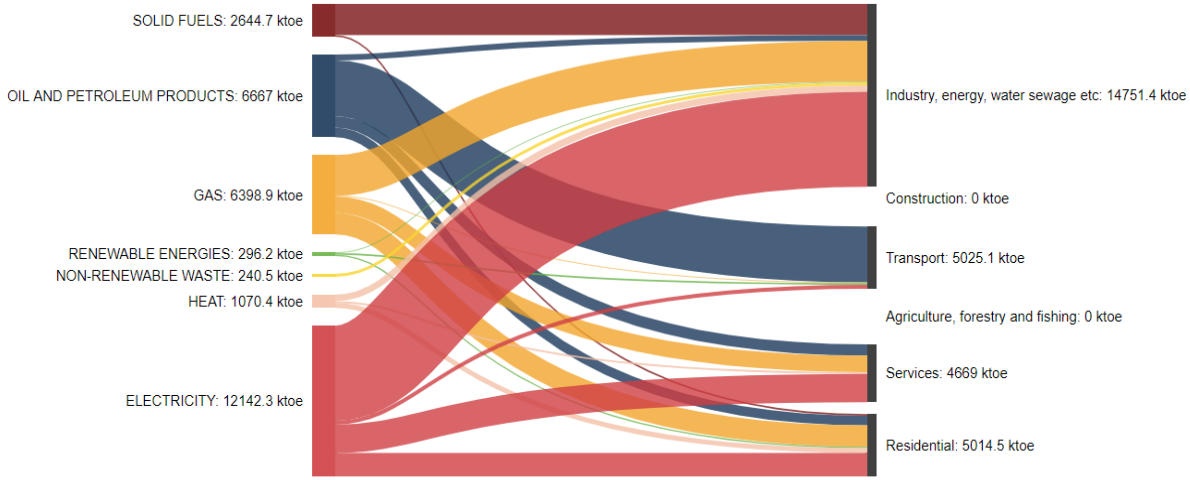
SCENARIO 2030 2/2

- Switch off Coal Power Plant Düben (67 MW)
- Electrification of heat not generated by the coal power plant
- Electrification transportation sector (25%)

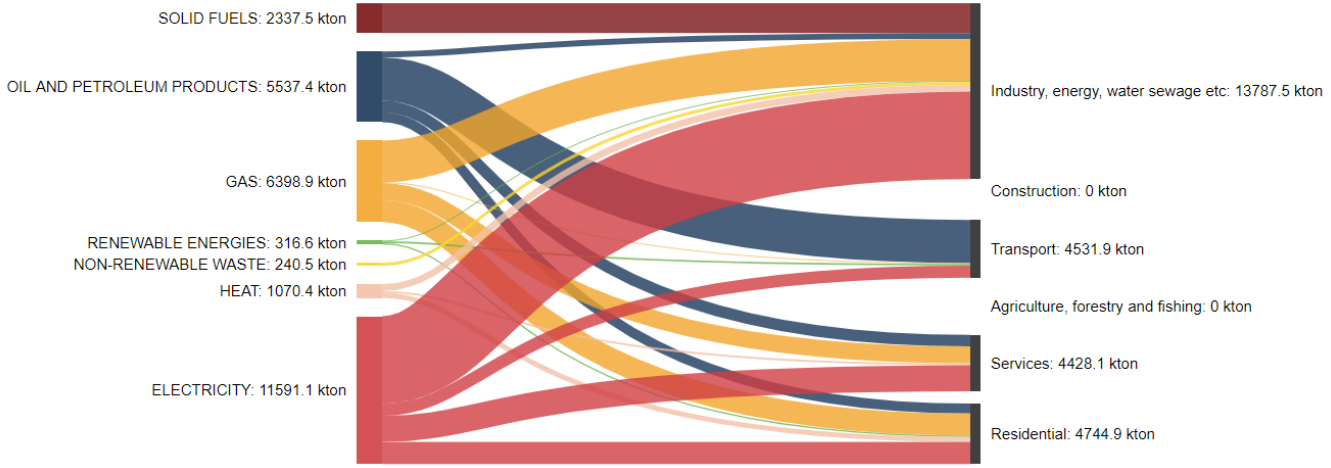
Scenario	Investment for wind farms in M€	Investment for photovoltaic plans in M€	Investment for biomass fired plants in M€	Total investment in M€	Ranking
2030.1.	700	0	0	700	1
2030.1.	350	1.140,8	0	1.491	3
2030.1	350	0	841,4	1191,9	2
2030.1.	231,3	1150,8	555,4	1.539,6	4
2030.1.	0	2.281	0	2.281	7
2030.1.	0	1.140,8	841,4	1.982	6
2030.1.	0	0	1.682,9	1682,9	5

Scenario	CO2 emissions calculated in ktCO2	Reduction in ktCO2	Reduction in %
Scenario 2030.1	25.322	24.199	48,9%
Scenario 2030.2	27.824	21.697	43,8%

CHANCES AND CHALLENGES



Status Quo

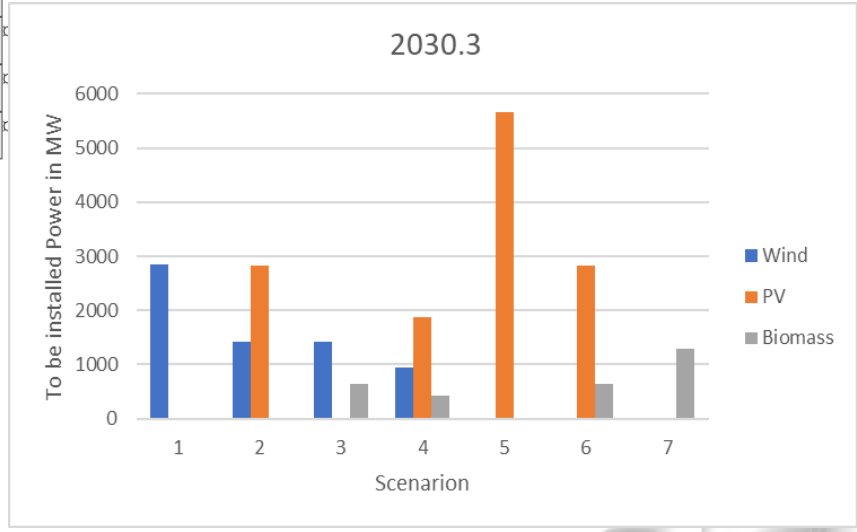


Scenario 2030.1

CHANCES AND CHALLENGES

In order to reach CO2 reduction aim (-55%) an electrification of the transportation sector by 91% is needed

¤	Expansion·in·%¤			Expansion·in·GW¤		
scenario¤	Wind· farms¤	PV·plants¤	Biomass· fired· plants¤	Wind· farms¤	PV·plants¤	Biomass· fired· plants¤
2030.3.¤	56,2,6¤	0¤	0¤	2852,8¤	0¤	0¤
2030.3.¤	28,0¤	125,4¤	0¤	1426,4¤	2826,6¤	0¤
2030.3¤	28,0¤	0¤	162¤	1426,4¤	0¤	648¤
2030.3.¤	18,5¤	82,7¤	106,9¤	941,4¤	1865,6¤	427,7¤
2030.3.¤	0¤	250,8¤	0¤	0¤	5653,4¤	0¤
2030.3.¤	0¤	125,4¤	162,0¤	0¤	2826,7¤	648¤
2030.3.¤	0¤	0¤	324,0¤	0¤	0¤	1296¤



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