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Achieving the Paris Climate Goals and thus growing the economy

A scenario-based modelling approach interlinking Austrian value creation and energy consumption

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*in co-operation with Environment Agency Austria, Austrian Energy Agency, TU Graz, Energy Economics Group, ethink
Energy Research, TU Wien and CESAR*

Experts' Climate Coffee Break (6 December 2018)

Climate Change Center Austria

***Accelerating the Transformation to Carbon-Neutrality
Perspectives on Technology, Economy and Agriculture***

Katowice Climate Change Conference, 2-14 December 2018



Achieving the Paris Climate Goals- A Transition Scenario for Austria

Objective of the Project

Developing, modelling & analyzing

new energy scenarios for Austria until 2050

- **WEM Scenario** - with existing measures – May 2016, counterfactual
- **Transition Scenario** achieving at least 80-95% reductions in GHG emissions (2050/1990) by mitigating fossil fuel energy use taking into account an international setting of climate policy after the COP21 in Paris

Transition - 5 Points in 5 Minutes

1. Framework conditions for the Transition Scenario:
Collective action, carbon pricing and low-carbon investments
2. Reducing energy consumption:
Increasing energy efficiency, fostering behavioural and lifestyle changes
3. Rebuilding the energy system:
Electrification and renewable energy deployment
4. Developing a comprehensive transformation narrative
5. Avoiding dangerous climate change

1) Framework Conditions are Key: Collective Action, Carbon Pricing and Rational Decision-Making

The Transition scenario assumes

- **global climate action and commitment** to achieving the objectives of the Paris Climate Agreement to limit temperature rise well below + 2°C
 - **external costs of fossil fuel use to be internalized**
 - **carbon pricing for rational decision-making**
 - **binding regulatory measures**
 - **national support schemes** are directed towards decarbonization
 - **participation** of diverse stakeholders at different governance levels
- competitiveness and carbon leakage are not an issue
 - fostering rational decision-making
 - by investors into carbon neutral innovations
 - by households regarding low-carbon products and services
 - climate policy is highly accepted within society
 - transition is more than a technological fix, it represents a new mindset

1a) Carbon Pricing

Steep and substantial rise in energy or CO₂ prices according to the carbon content of the specific energy carrier

Prices rise from 2025 onwards (with respect to WEM scenario)
CO₂ price increase leads to effective energy price increases

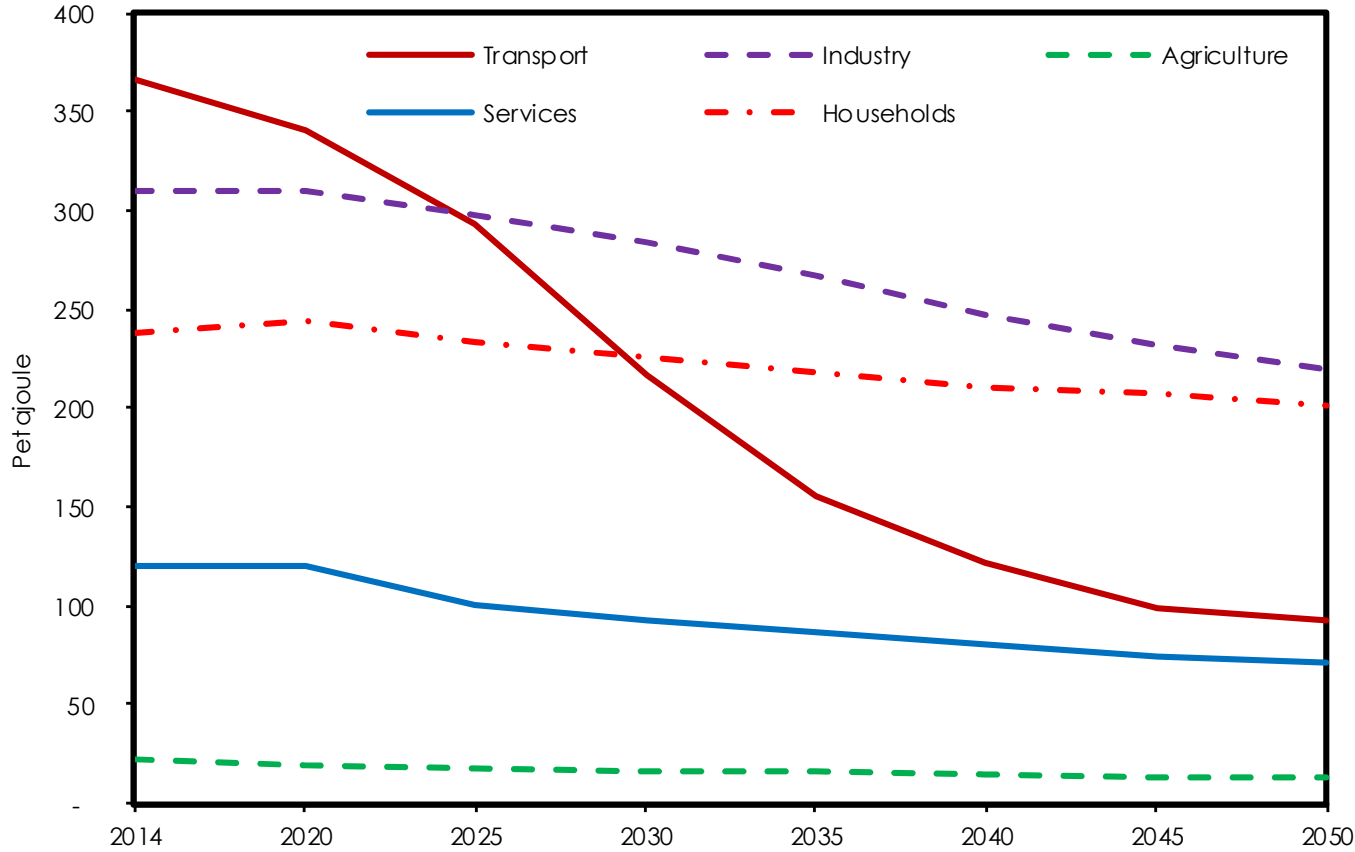
8 €/t CO₂ in 2020

40 €/t CO₂ in 2030

200 €/t CO₂ in 2050 (in € of 2013)

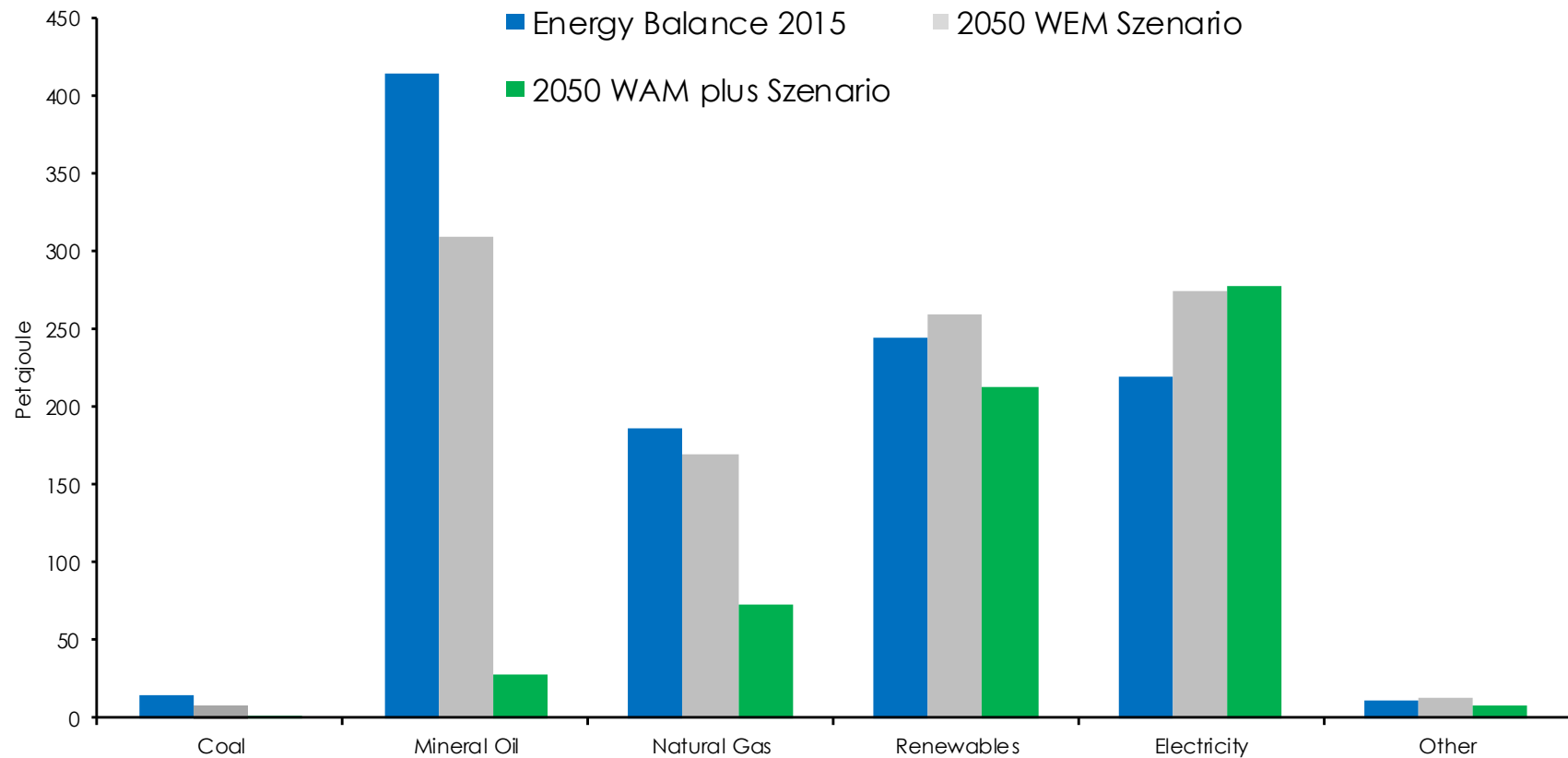
		2015	2020	2030	2050
Mineral Oil	€/bbl, real2015	49	77	96	172
Natural Gas	€/MMBtu, real201	6	8	10	16
Coal	€/t, real2015	51	64	92	167

2) Reducing Energy Consumption: Final Energy Demand by Sectors (Transition Scenario)



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3) Electrification and Renewable Energy Deployment

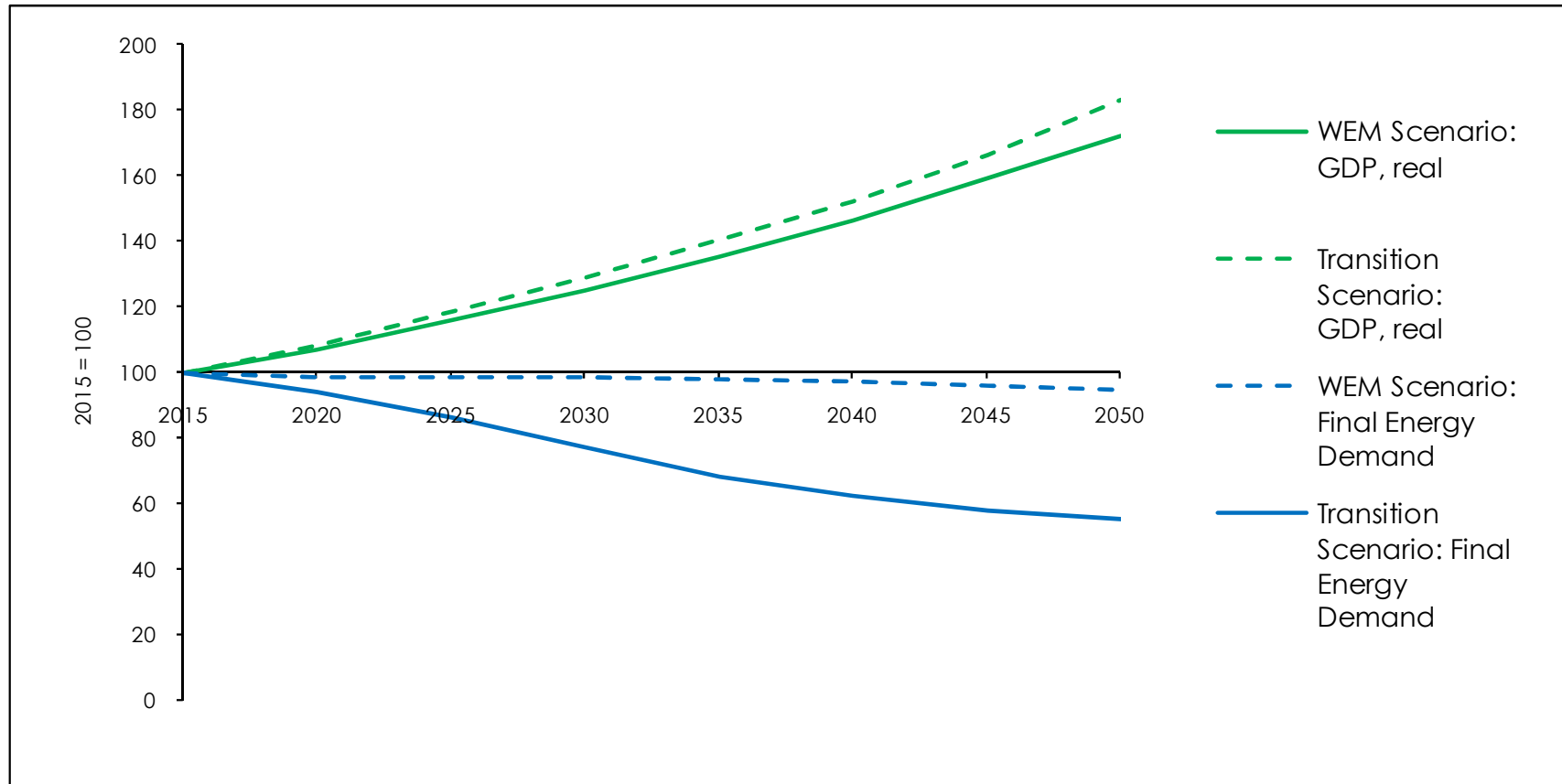


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4) Strategies, Instruments and Measures to Transform the Economy in a Sketch



5) Avoiding Dangerous Climate Change and Growing the Economy



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Thank you!

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Link to Project Report:

https://www.wifo.ac.at/publikationen/publikationssuche?detail-view=yes&publikation_id=61089