

# Lessons learned from assessing modelling exercises in Albania

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## Criteria for assessing models:

1. modelling method
2. reliability of baseyear data and credibility of projections of future drivers
3. scenario definitions

## Modelling methodology

An “ideal” model:

- Technological explicitness: the extent to which individual technologies are represented in a model
- Microeconomic modelling of behaviour: cost-optimisation or simulation?
- Macroeconomic feedbacks: representation of economic interactions between different markets

## Modelling method

	Modelling method			
Model	Technological explicitness	Microeconomic realism (optimisation)	Macroeconomic feedbacks	Cost information
Model 1	some sectors	No	No	Yes
Model 2	Yes	No	No	Yes
Model 3	Yes	Yes	No	Yes
Model 4	n.a.	No	No	No
Model 5	some sectors	No	No	Yes
Model 6	Yes	Yes	No	Yes

## Base year data

Comparison with

- NC3 inventory
- INSTAT
- Data from National Agency of Natural Resources

## Baseyear data

Sector	Model	CO2 emissions, kt (2010)*	Final energy demand, TWh (2010)*
Agriculture	NC3 Inventory	365	n.a.
	Model 1	222	1.13
	Model 5	2066	0.78
Buildings	NC3 Inventory	1287	n.a.
	Model 3	563	9.34
	Model 1	290	7.76
	Model 5	68	7.44
Industry	NC3 Inventory	703	n.a.
	Model 5	1050	3.41
	Model 3	926	4.15
	Model 1	654	3.61
Transport	NC3 Inventory	2301	n.a.
	Model 2	2266	8.59
	Model 5	2262	8.32
	Model 3	2283	8.67
	Model 1	2239	8.57
Total	NC3 Inventory	4969	n.a.
	INSTAT	n.a.	22.89
	Model 5	5446	19.95
	Model 1	3639	21.43
	Model 3	3868	22.16

## Drivers of emissions

- Assumptions regarding trends of drivers of demand (GDP, population, households) should be realistic

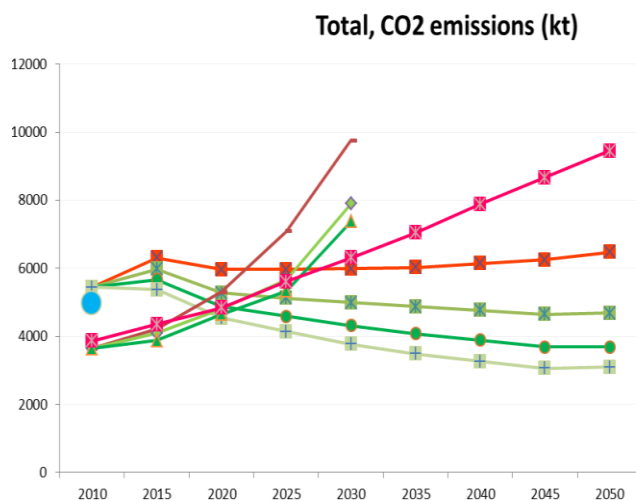
## Drivers of emissions

Drivers	Model	AGR (%)
GDP, bn EUR	Model 3	3.08
	Model 5	1.93
	Model 1	4.67
Hholds, '000	Model 5	0.29
	Model 1	2.77
Pop, million	Model 5	-0.11
	Model 1	1.00
	Model 3	-0.04

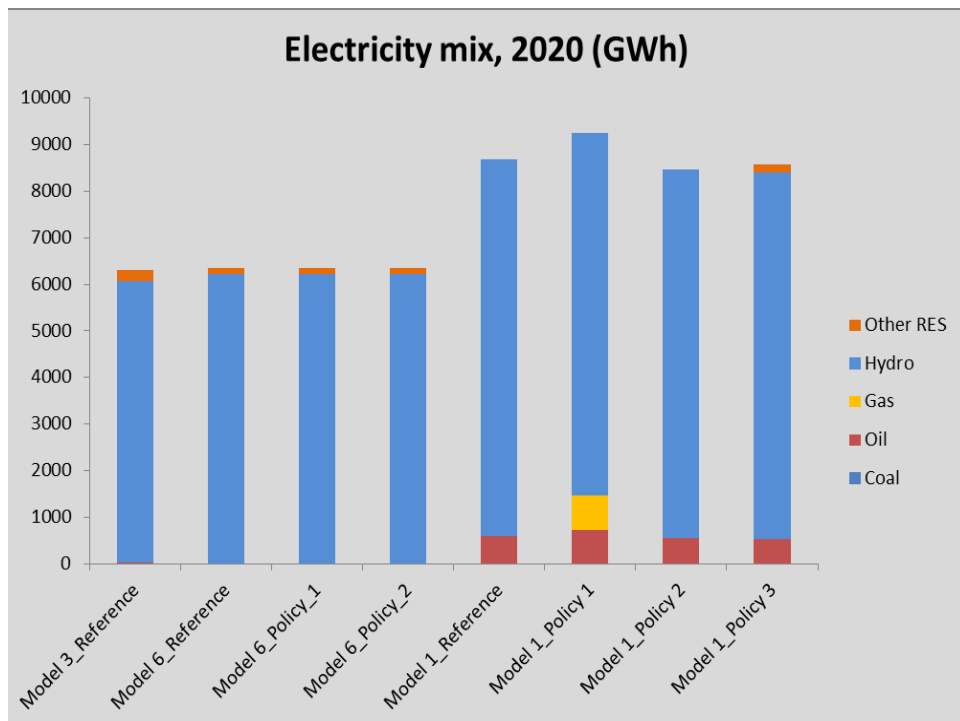
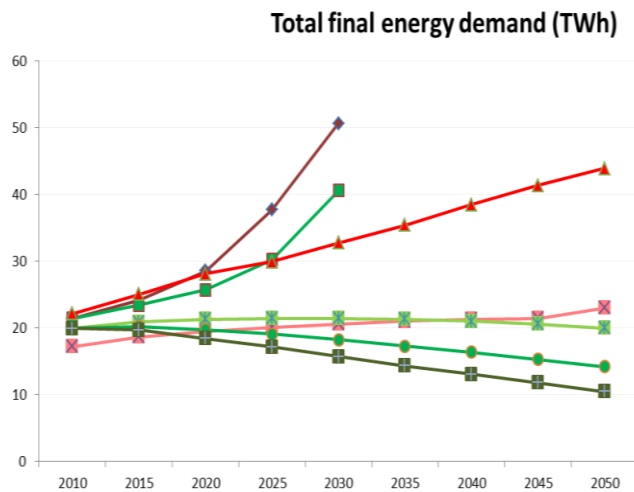
## Scenarios

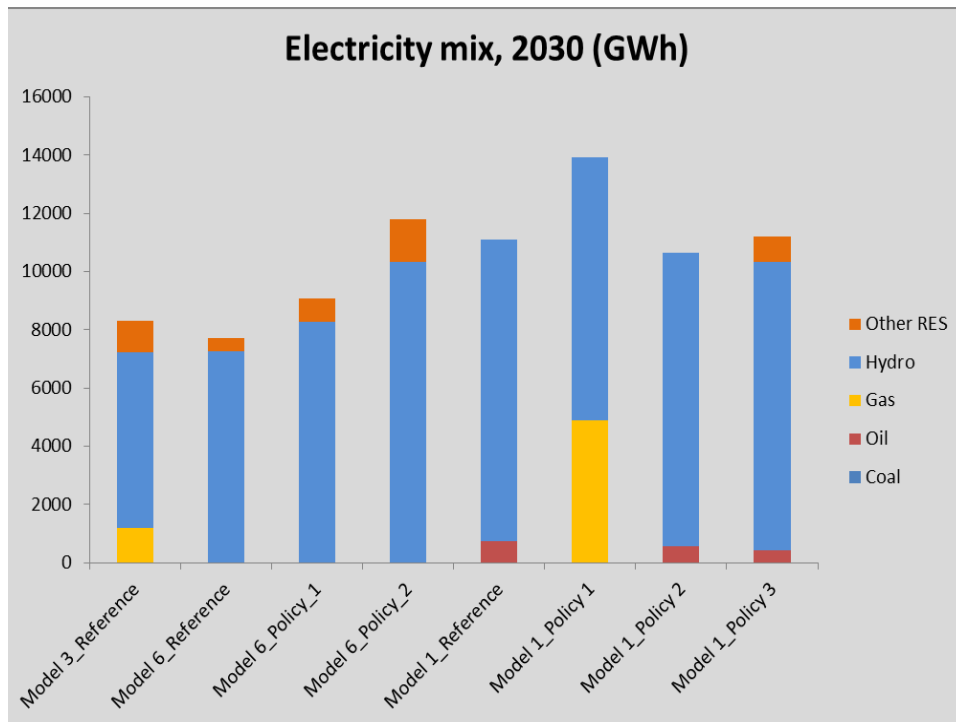
- Baseline scenario should represent current undertakings (existing policies), mitigation scenario should be current undertakings +
- Ideally autonomous energy efficiency improvement should be included in baseline
- Level of ambition should be in line with 2 degree target
- Commitment should be fair, reflect responsibilities and respective capabilities

## Total CO2 emission trends for different models



## Total final energy demand for different models





Thank you for your attention!

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