# Modelling RES deployment in Turkey: RESolve-E results

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- *The RESolve-E model*
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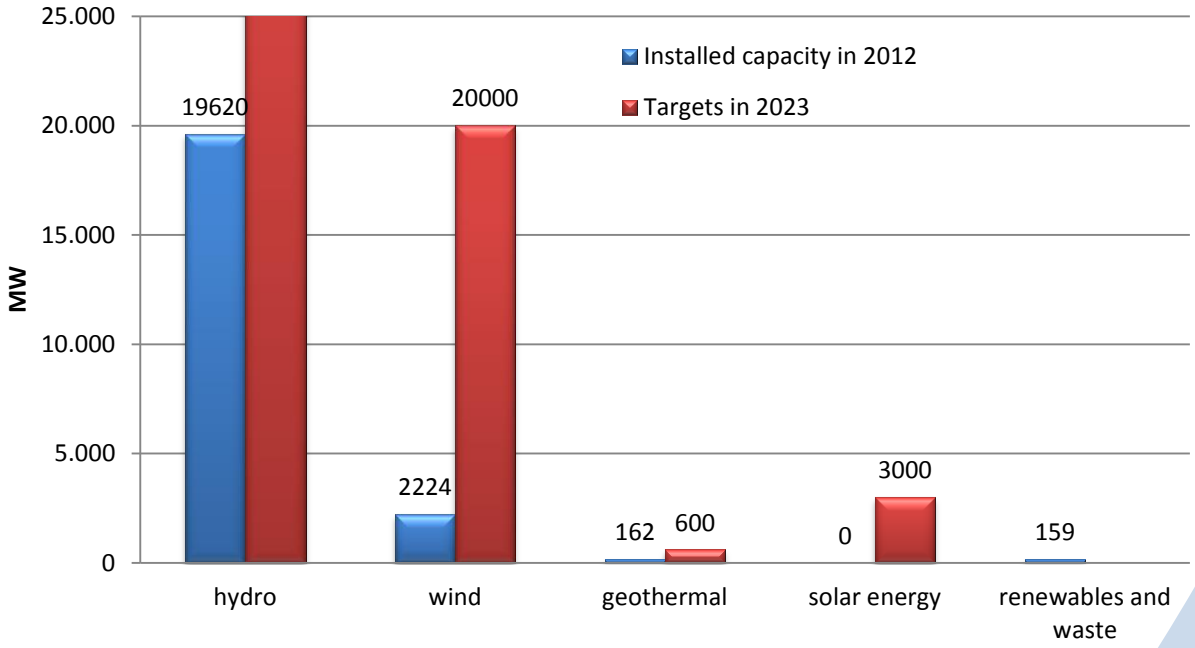
- *Concluding remarks*

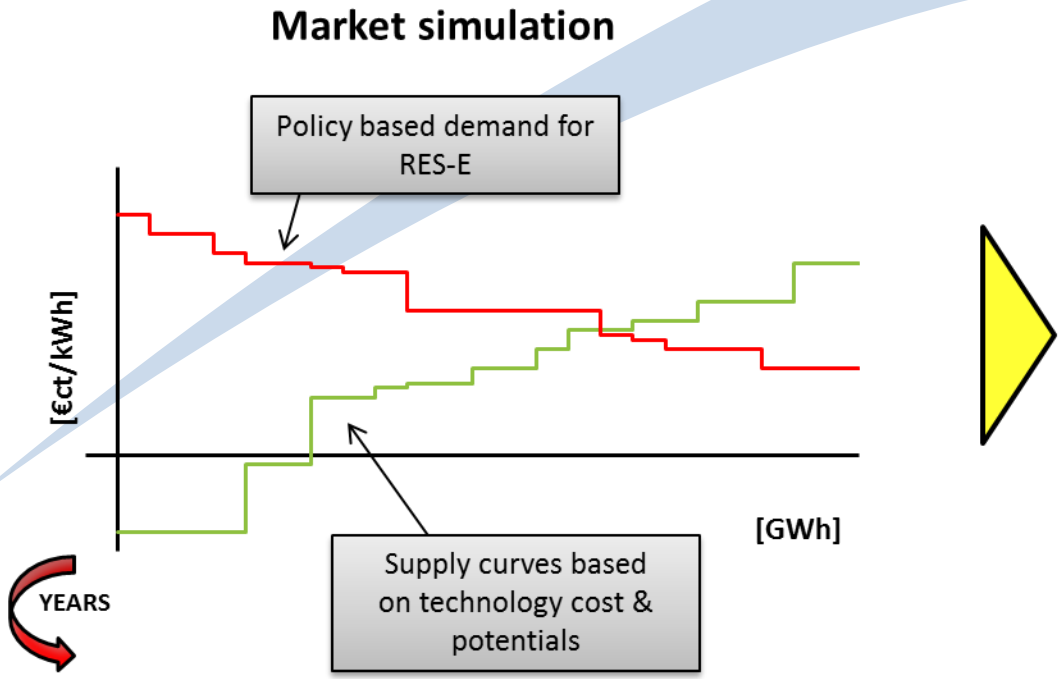
# RES targets

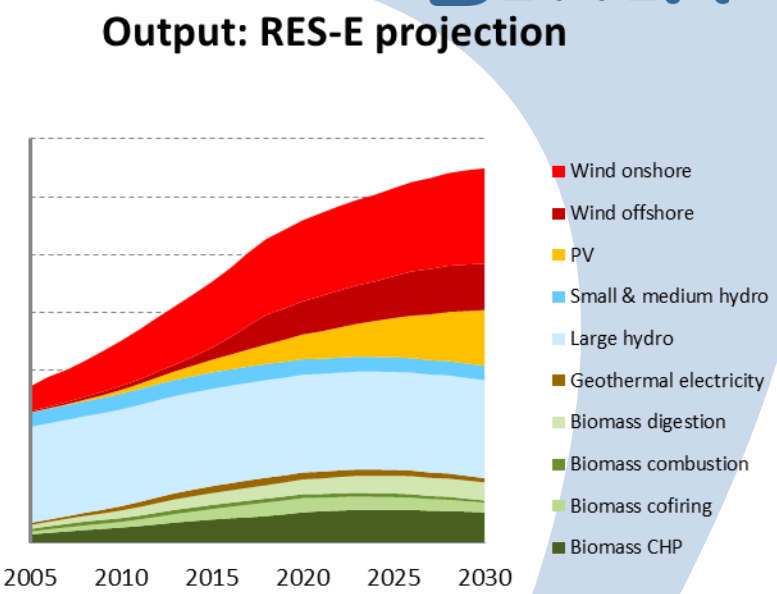
***the share of renewable resources in electricity generation shall be increased up to at least 30% by 2023***

**Renewables cummulative installed capacity in 2012 vs. 2023 plans**



# Modeling RES policy scenarios: How does the RESolve-E model work?




**Inputs:**
- Policy measures
- Technology potentials
- Technology costs

→ *RES-E demand*
→ *RES-E supply*

**Outputs:**
RES-E projections per technology, per year, per country

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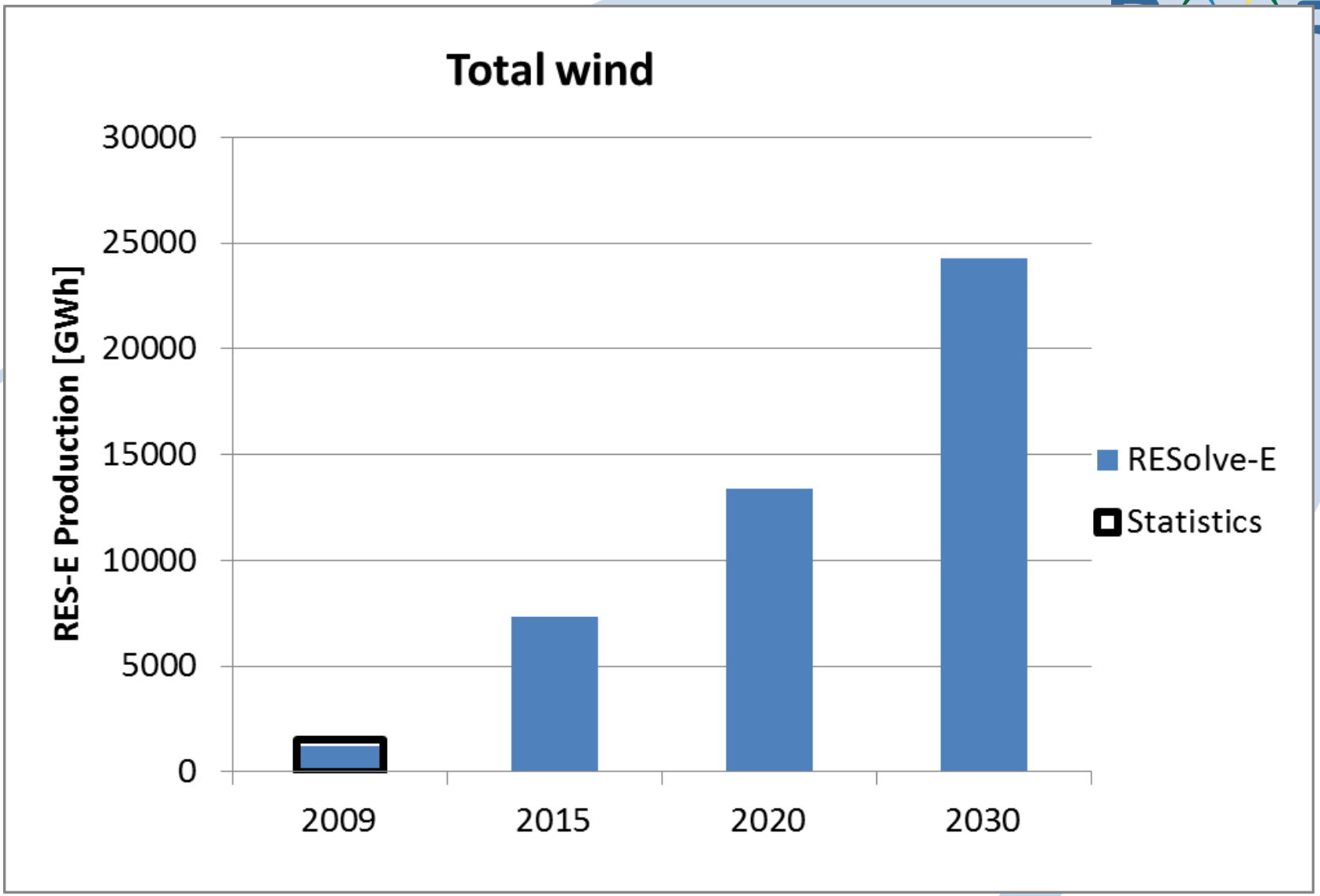
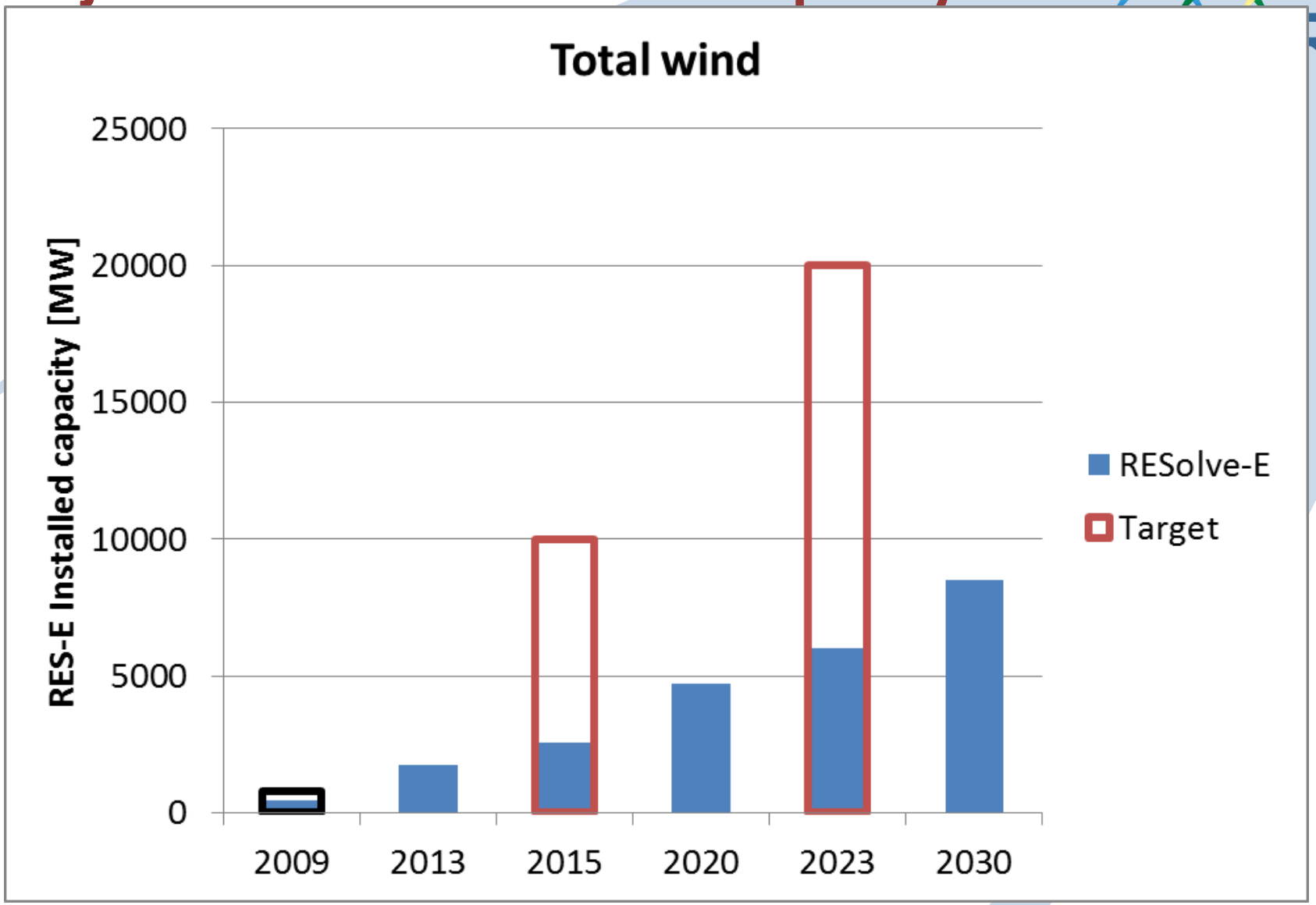
# RESolve-E general observations

- Model calibrated against available statistics on RES-E production in 2009
- Under current policy no production from PV, CSP and offshore wind
- Under current policy the renewable targets set for 2023 seems not to be reached
  - Model doesn't include possible cost decrease due to local production
  - Incentives provided through covering grid costs and promotion of own consumption

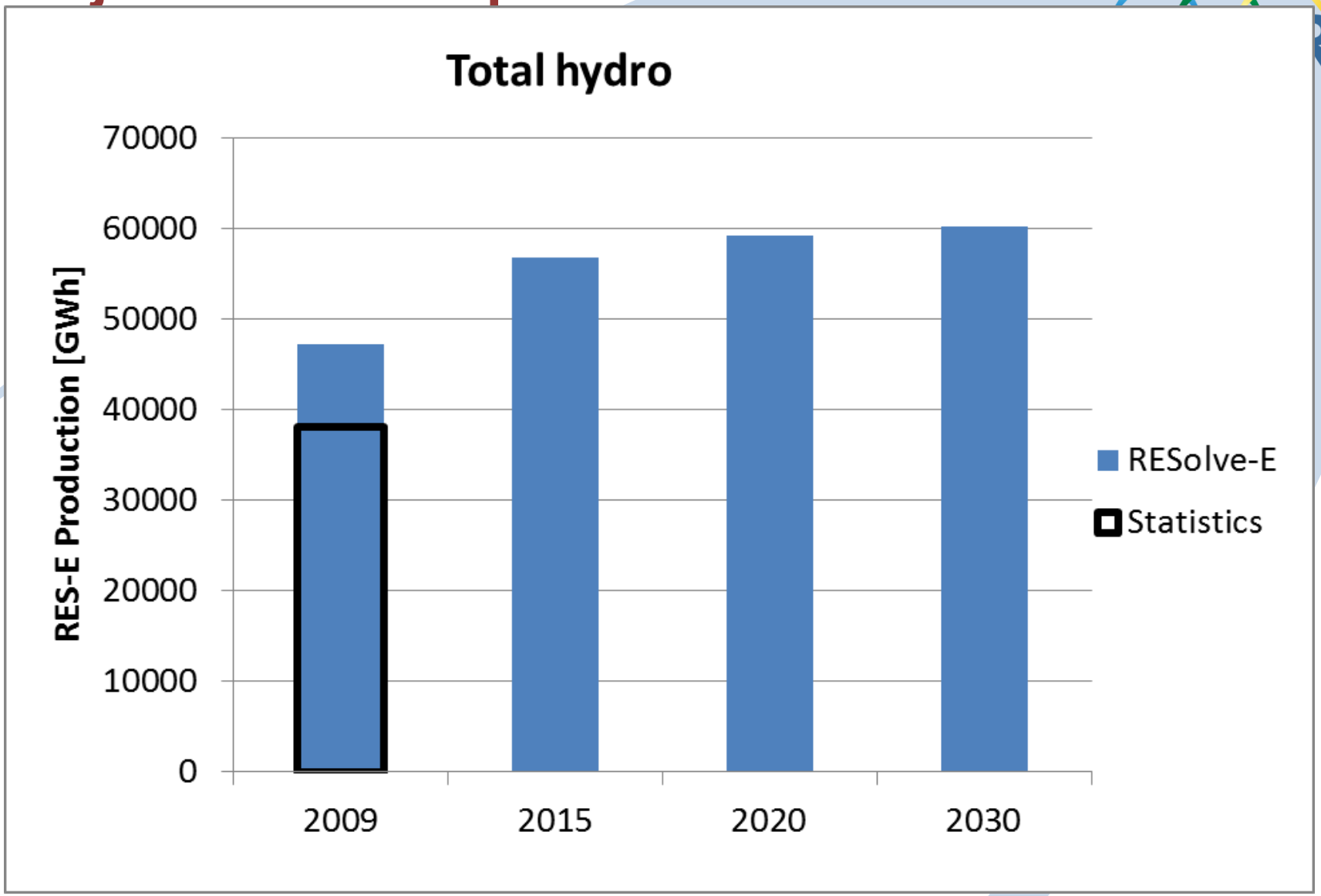
# Projections RES-E production



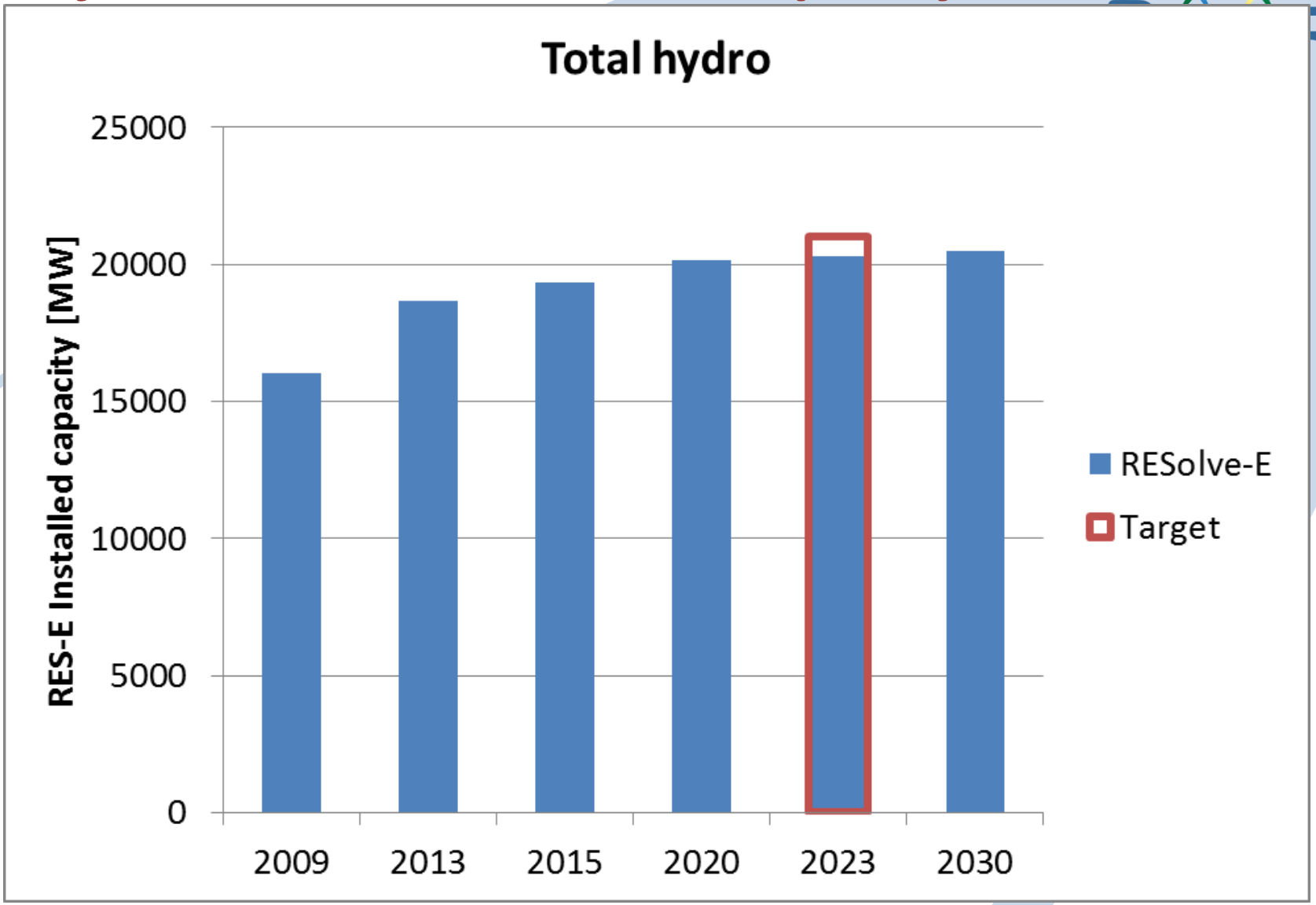
# Projections RES-E installed capacity



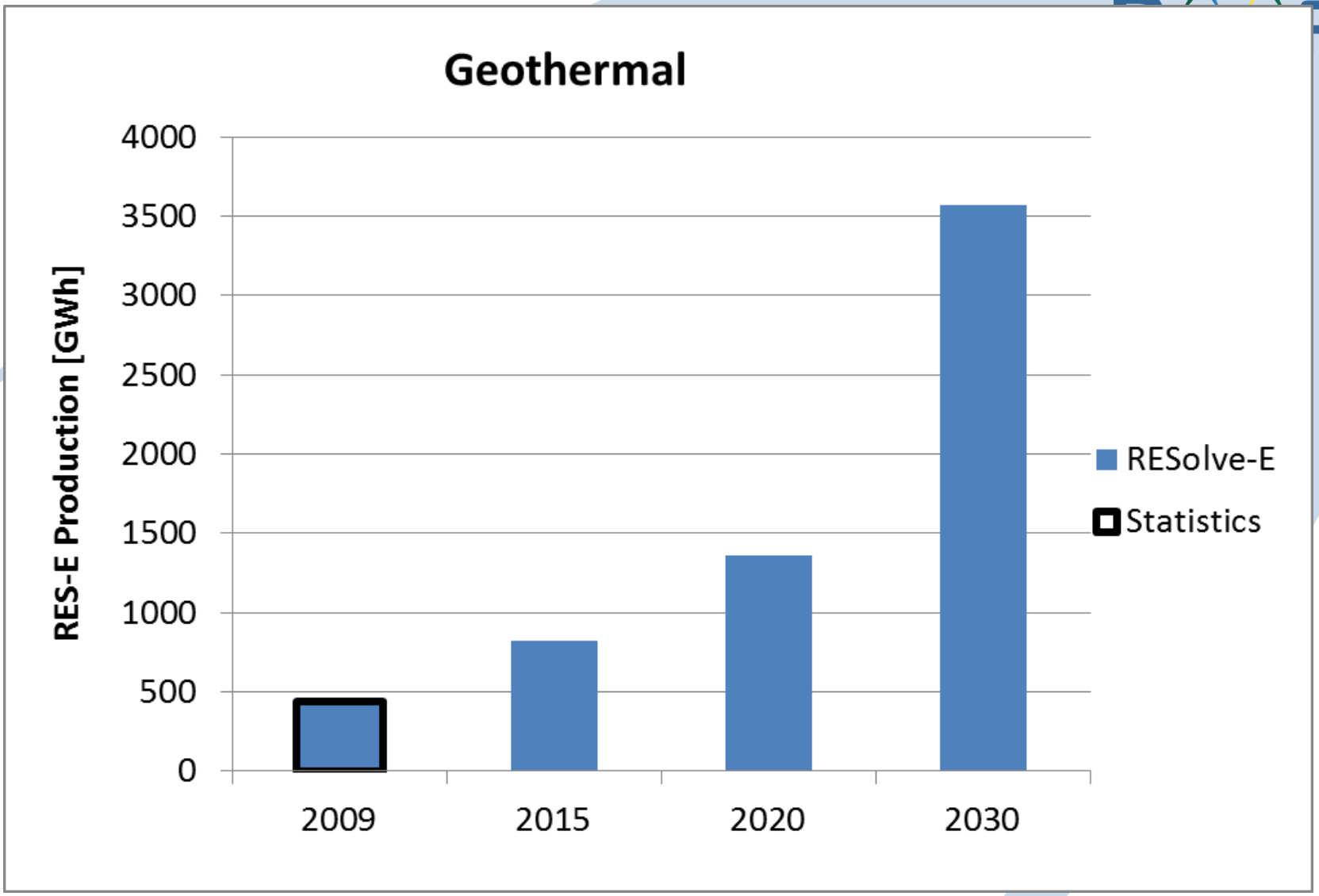
# Projections RES-E production



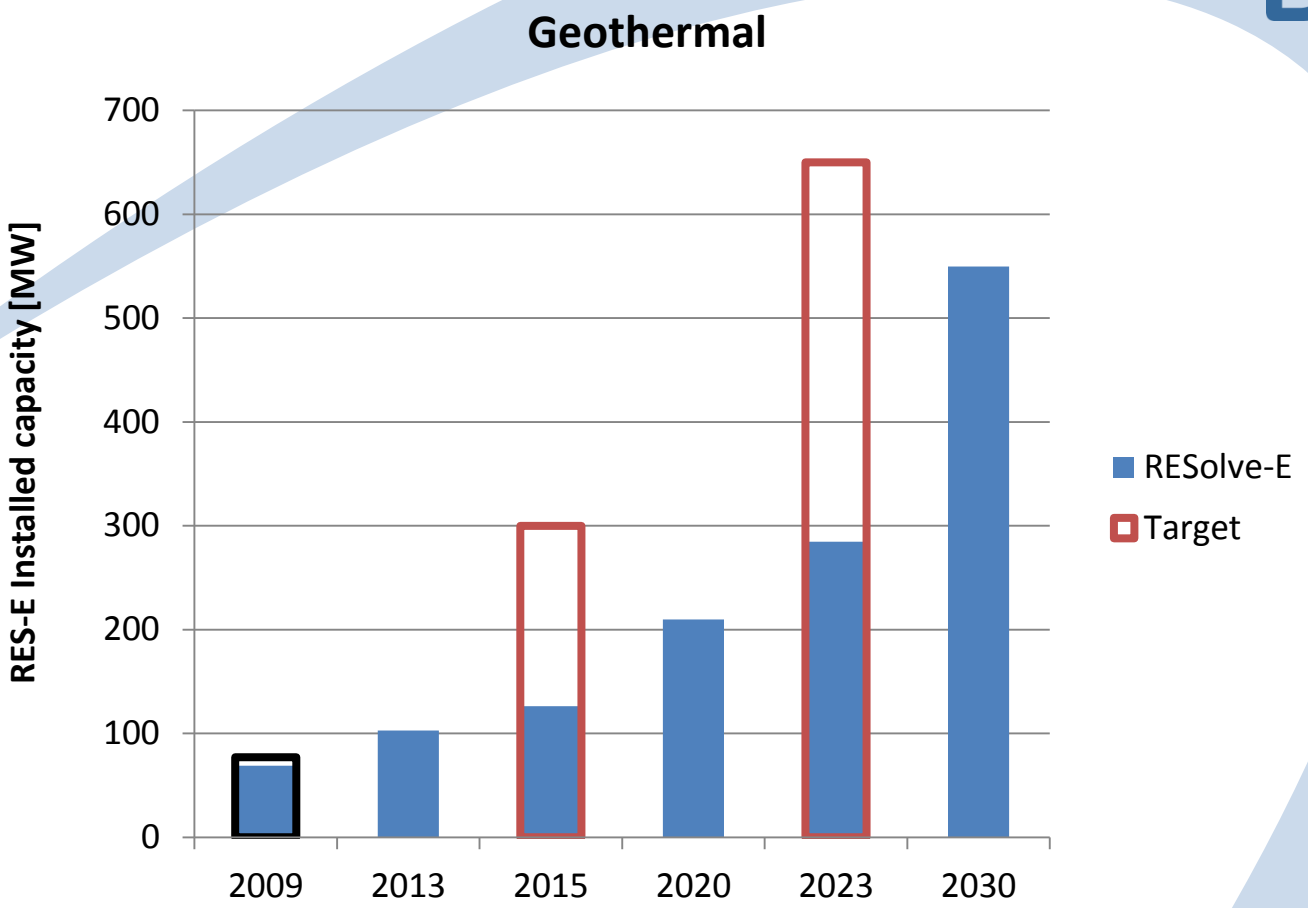
# Projections RES-E installed capacity



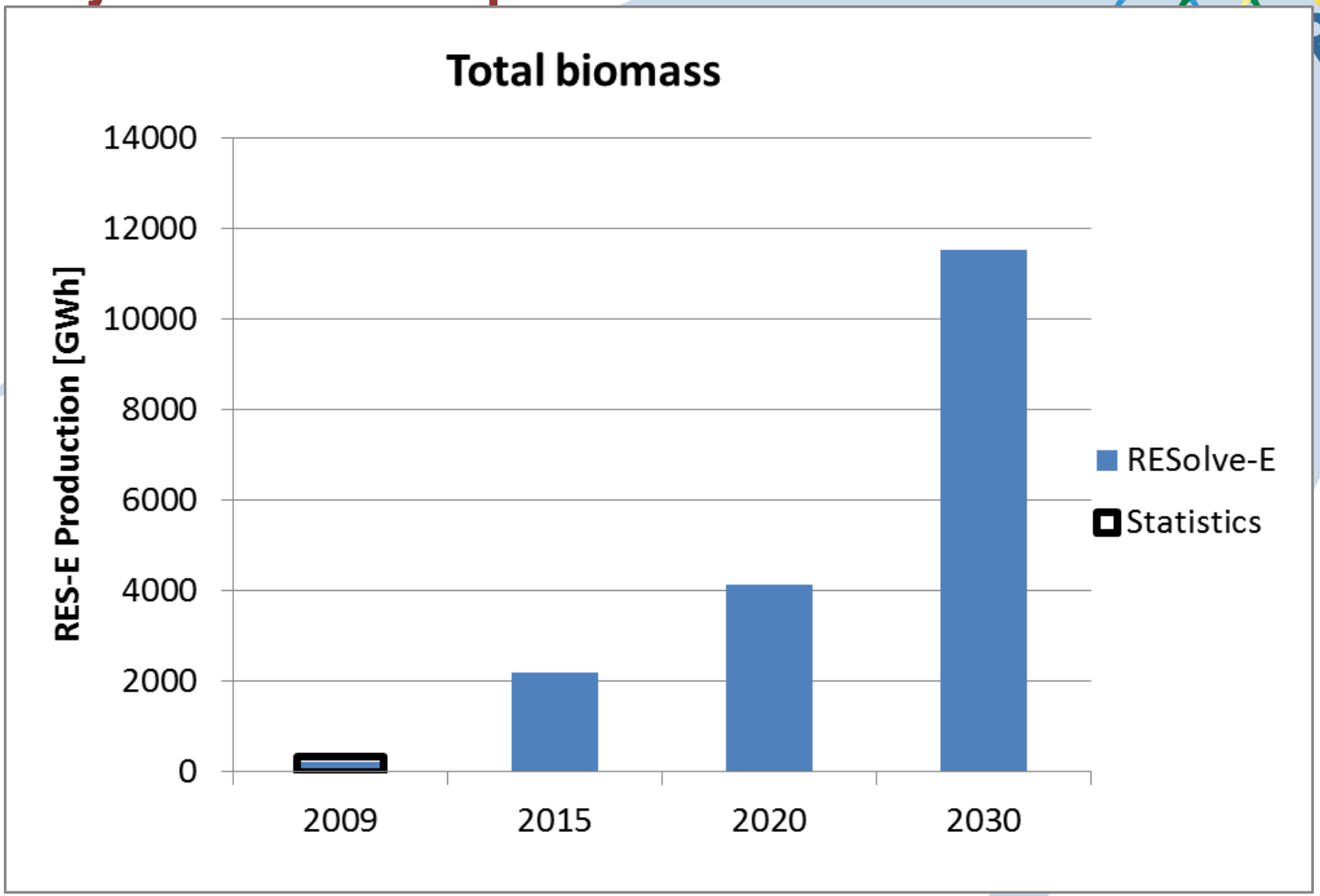
# Projections RES-E production



# Projections RES-E installed capacity



# Projections RES-E production

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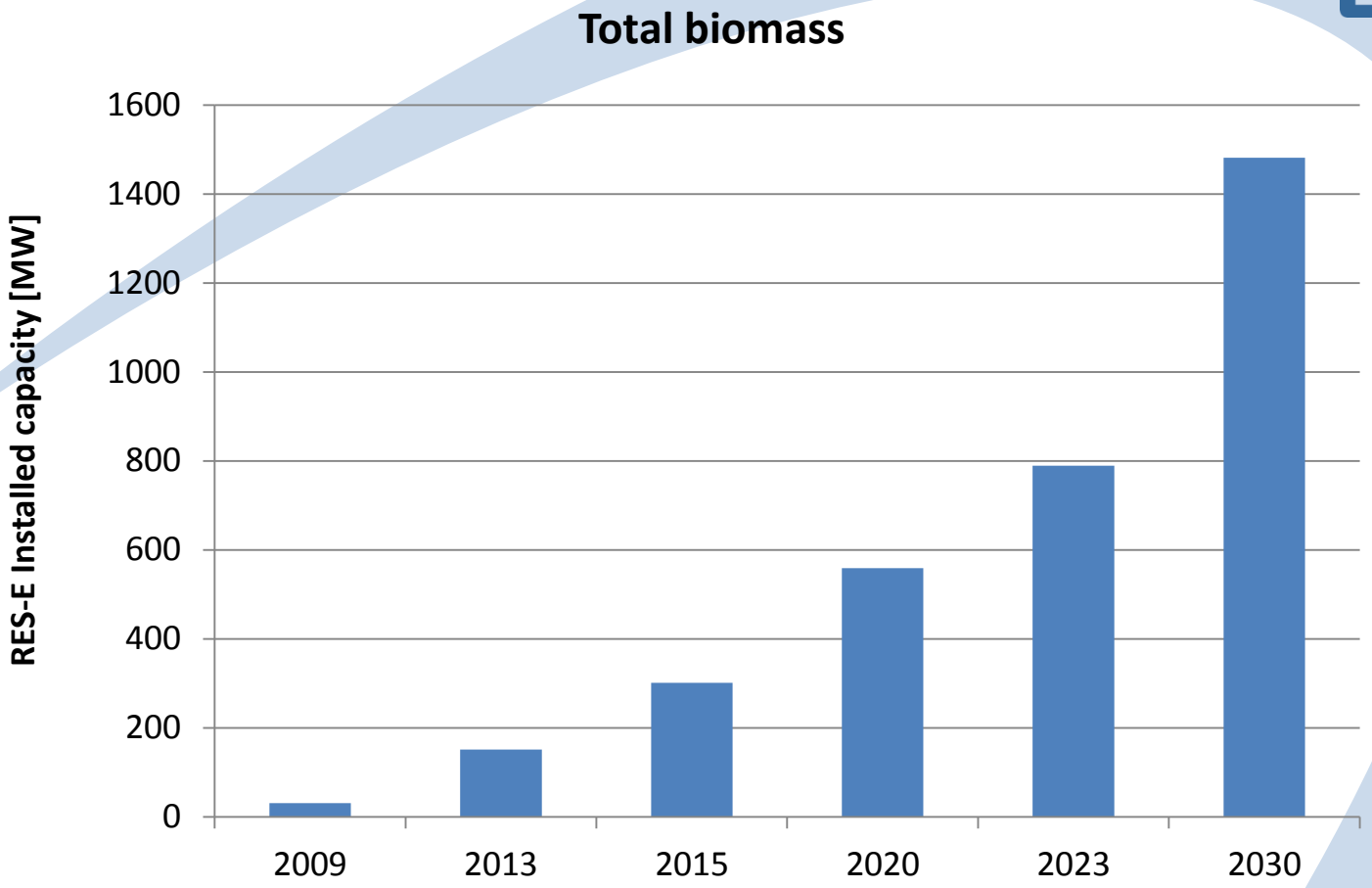
# Projections RES-E installed capacity



# Concluding remarks

- The new RE Law in Turkey is triggering RES deployment
- Current level of support appears not to be sufficient to reach national targets
  - Cost decrease due to local production
  - Incentives provided to grid connection
  - Incentives for own consumptions
- Cooperation with the EU may create additional revenues
- However, demand from the EU depends on the EU RES objectives
- The first steps on electricity trade with the neighbours (including Bulgaria and Greece)



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# Thank you very much for your attention

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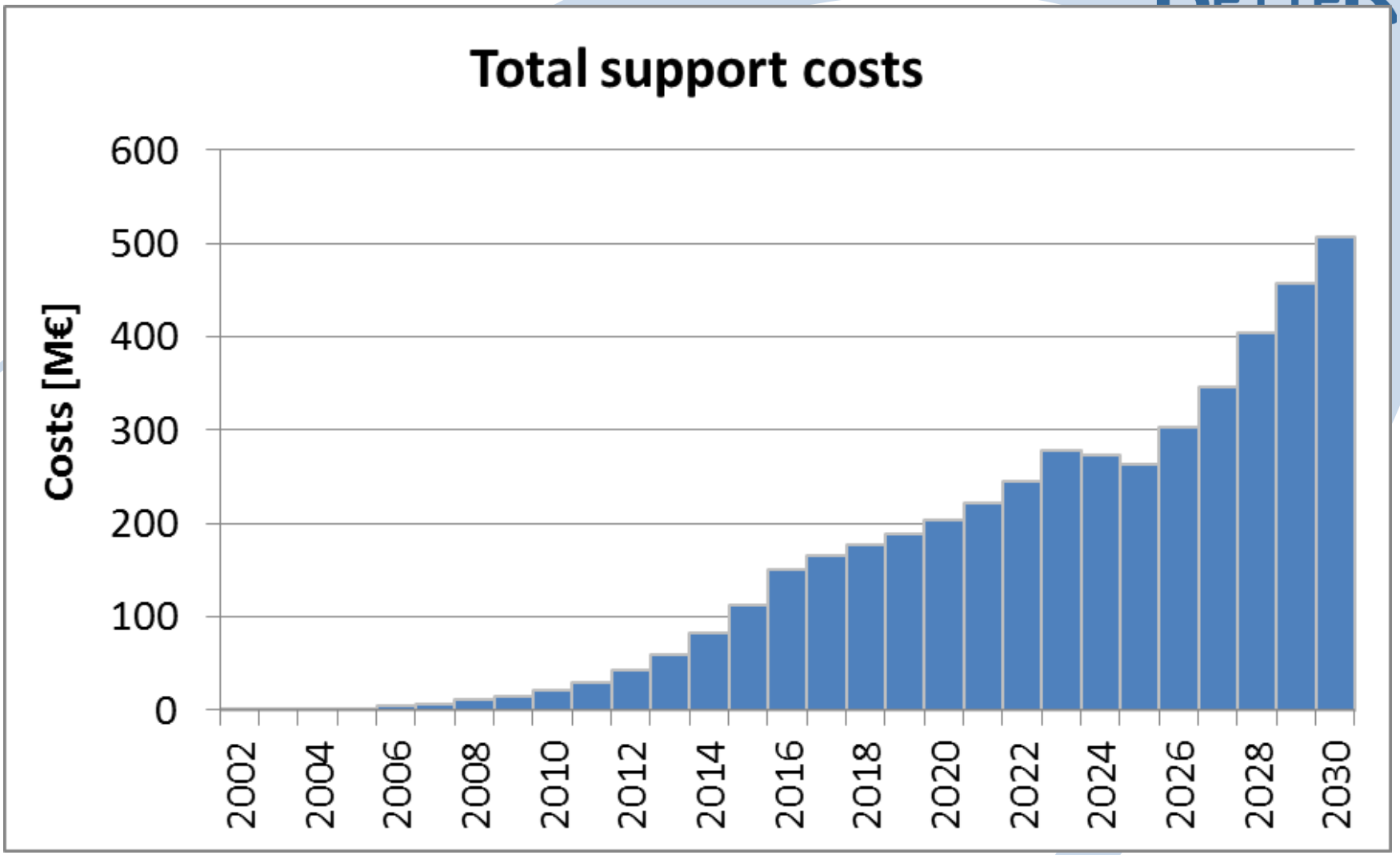
# [optional] Costs



# TR RES-E policy (source: RES Legal)

| | |
|---|---|
| Wind energy | • feed-in tariff: $ Cent 7.3 per kWh on- and off-shore(approx. €ct 5,6 per kWh)<br>• local-content bonus: $ Cent 0.6-3.7 per kWh(approx. €ct 0,5-2,9 per kWh) |
| Solar energy | PV:<br>• feed-in tariff: $ Cent 13.3 per kWh(approx. €ct 10,3 per kWh)<br>• local-content bonus: $ Cent 0.6-6.7 per kWh(approx. €ct 0,5-5,2 per kWh)<br>CSP:<br>• feed-in tariff: $ Cent 13.3 per kWh(approx. €ct 10,3 per kWh)<br>• local-content bonus: $ Cent 0.6-9.2 per kWh(approx. €ct 0,5-7,1 per kWh)<br>The total capacity of new installed solar installations is limited to 600 MW until 31 December 2013. (§ 6/C art. 5, YEK) |
| Geothermal energy | • feed-in tariff: $ Cent 10.5 per kWh(approx. €ct 8,1 per kWh)<br>• local-content bonus: $ Cent 0.7-2.7 per kWh(approx. €ct 0,5-2,1 per kWh) |
| Biogas | • feed-in tariff: $ Cent 13.3 per kWh(approx. €ct 10,3 per kWh)<br>• local-content bonus: $ Cent 0.4-3.8 per kW(approx. €ct 0,3-2,9 per kWh) |
| Hydro-power | • feed-in tariff: $ Cent 7.3 per kWh(approx. €ct 5,6 per kWh)<br>• local-content bonus: $ Cent 1-2.3 per kWh(approx. €ct 0,7-1,8 per kWh) |
| Biomass | • feed-in tariff: $ Cent 13.3 per kW(approx. €ct 10,3 per kWh)<br>• local-content bonus: $ Cent 0.4-1.8 per kWh(approx. €ct 0,3-1,4 per kWh) |