Updating the assessment of support expenditures for energy generated from renewable sources

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… a model-based prospective assessment done by use of TU Wien's Green-X model

Background & objective

of this presentation

- In 2014/2015 TU Wien has contributed to an assessment of the RES progress in the Contracting Parties of the Energy Community.
- This year …. by use of a specialised energy system/sector model (Green-X) a brief quantitative assessment has been conducted to **update on the necessary RES developments up to 2020** (in accordance with given 2020 RES targets), indicating
  - the necessary RES deployment &
  - the corresponding **support expenditures**.

Method of approach
(quantitative assessment)

- Key input parameter to modelling are aligned to key data sources (EUROSTAT, REAPs of CPs, PRIMES modelling and own Green-X database)

Based on PRIMES (EU energy projections)	Based on Green-X database	Defined for this study
Fossil fuel and CO_2-prices	Costs of renewables (Capital, Fuel, O&M)	Energy policy framework for renewables (support incentives)
Conventional reference supply portfolio by sector and country	Potentials of renewables	Wholesale electricity price development (based on demand- and price trends)
CO_2 intensity by sector and country	Specifics of biomass-trade	
Energy demand by sector and country	Technology diffusion / Non-economic barriers for renewables	
	Learning rates	

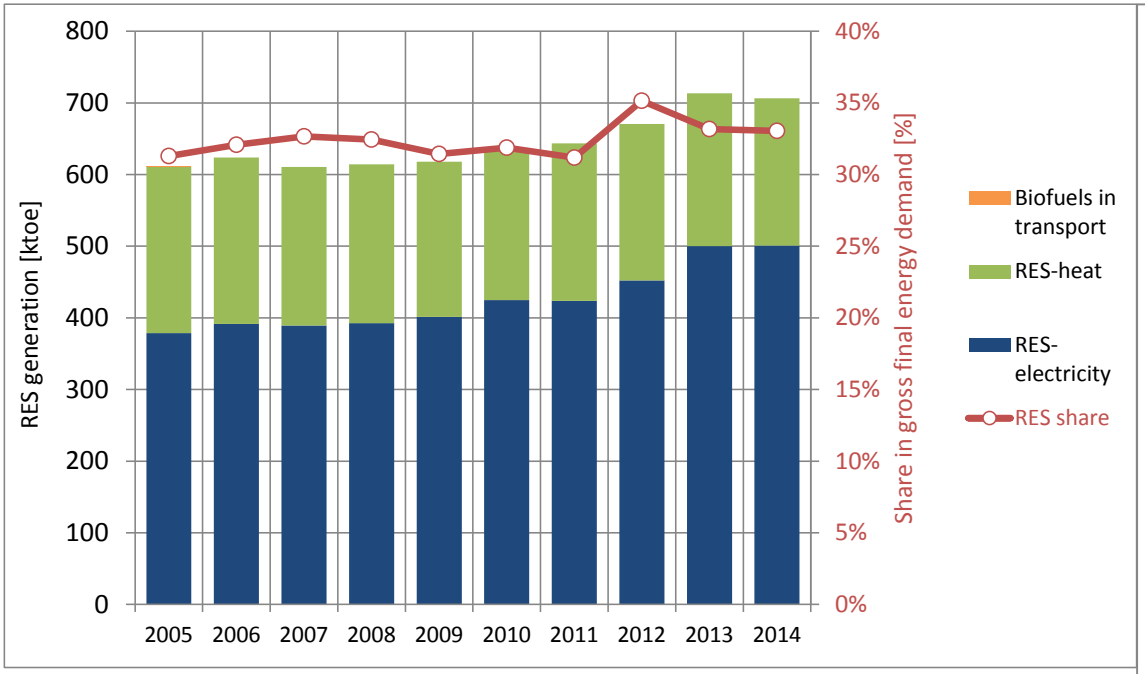
www.green-x.at

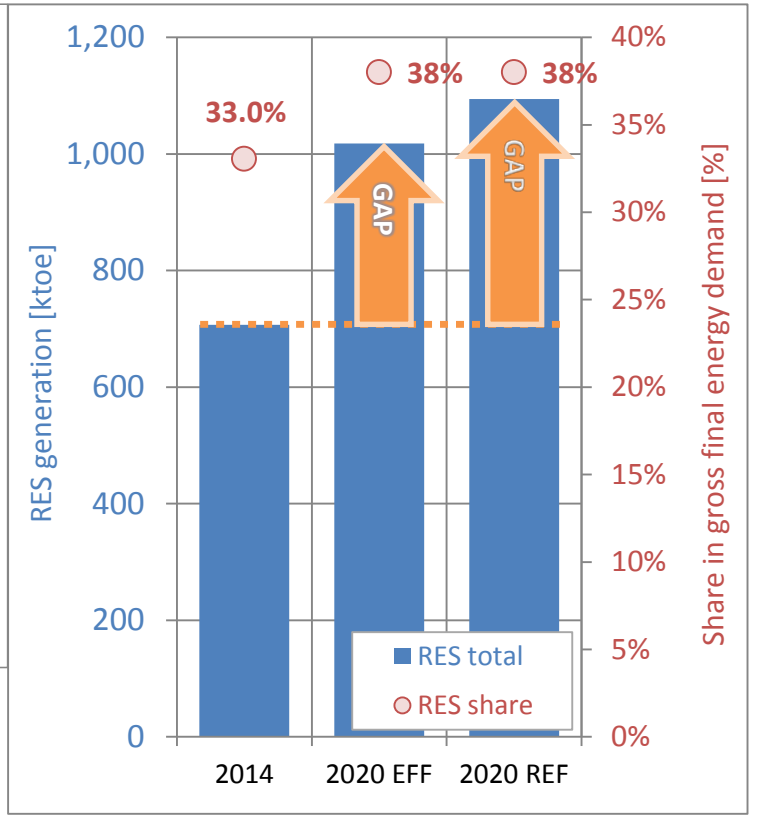
Results of the brief assessment

- Results are presented subsequently by Contracting Party

Albania

The remaining gap in meeting the 2020 RES target





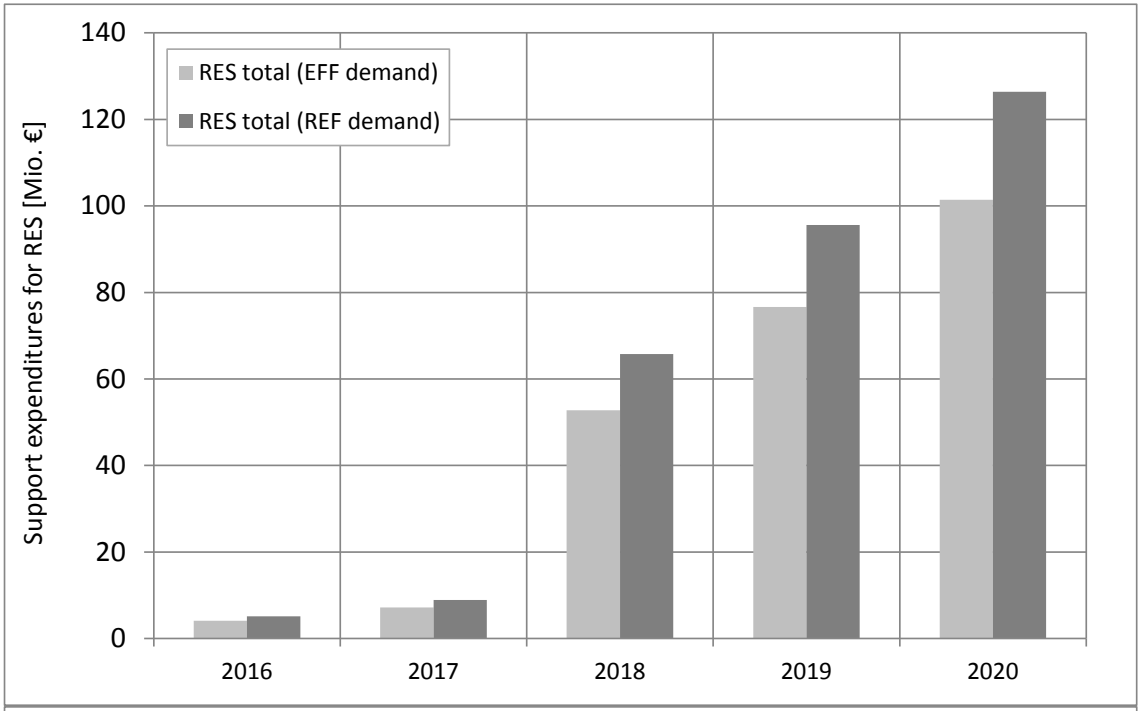
- Historic data on RES use (left), and
- Gap analysis (for meeting 2020 RES target) (right)

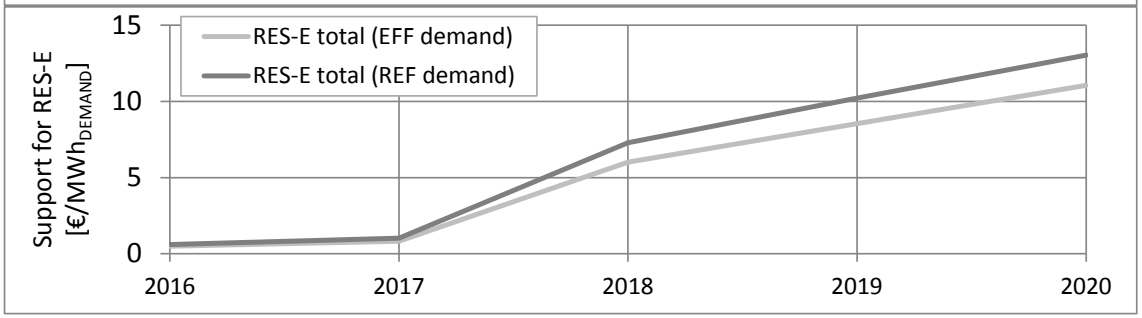
→ Required increase in RES between 2014 and 2020:
311 ... 388 ktoe

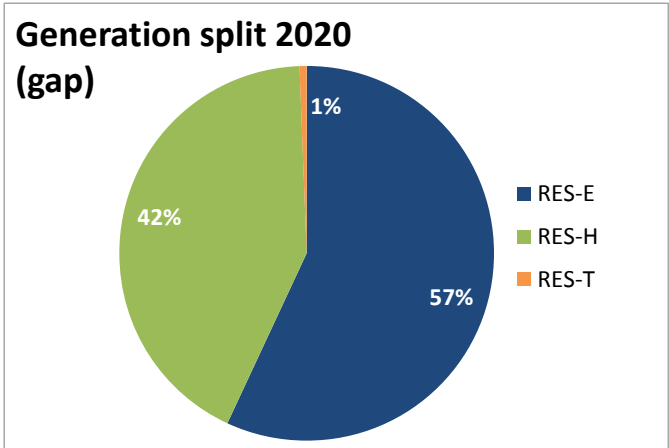
Source: EUROSTAT for historic data, own assessment concerning prospective analysis (Green-X modelling)

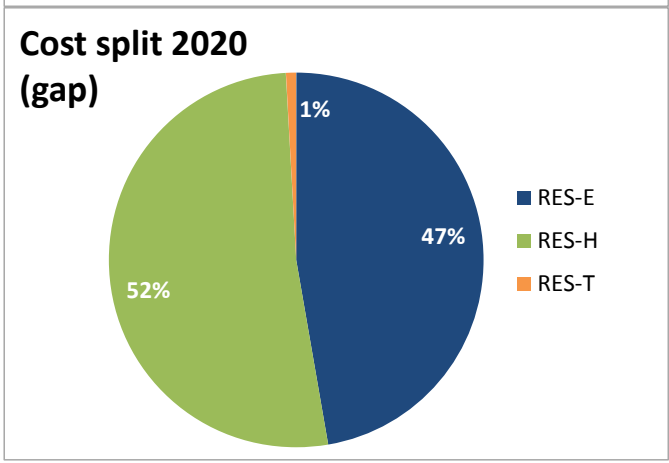
Albania

Estimation of required support expenditures





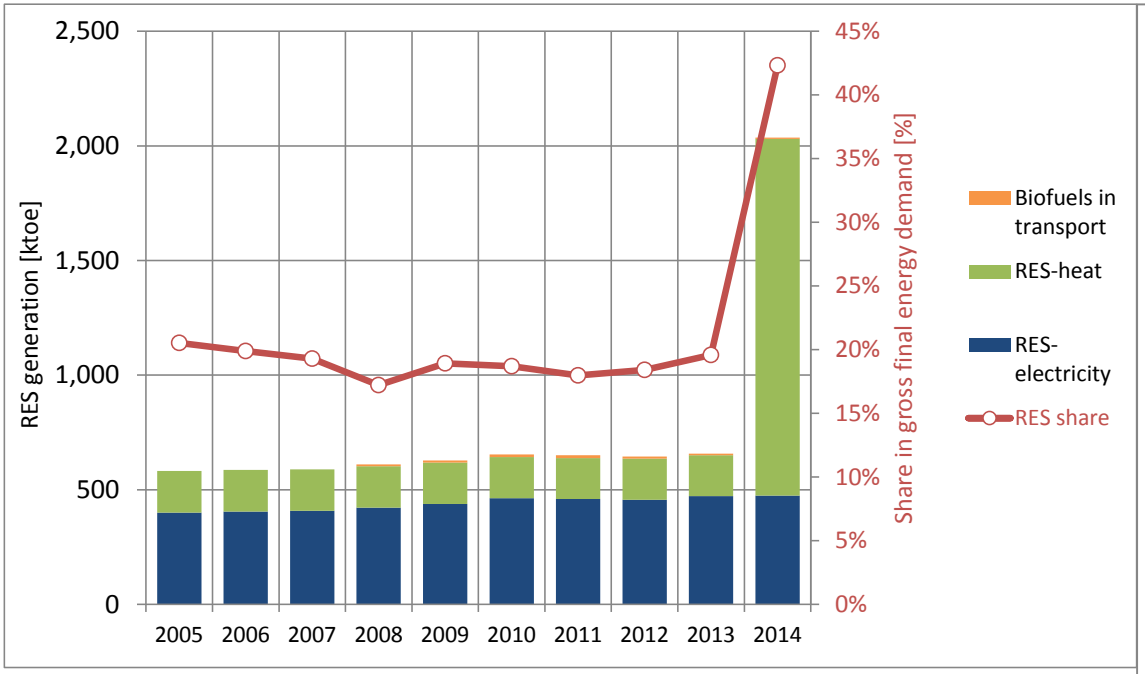


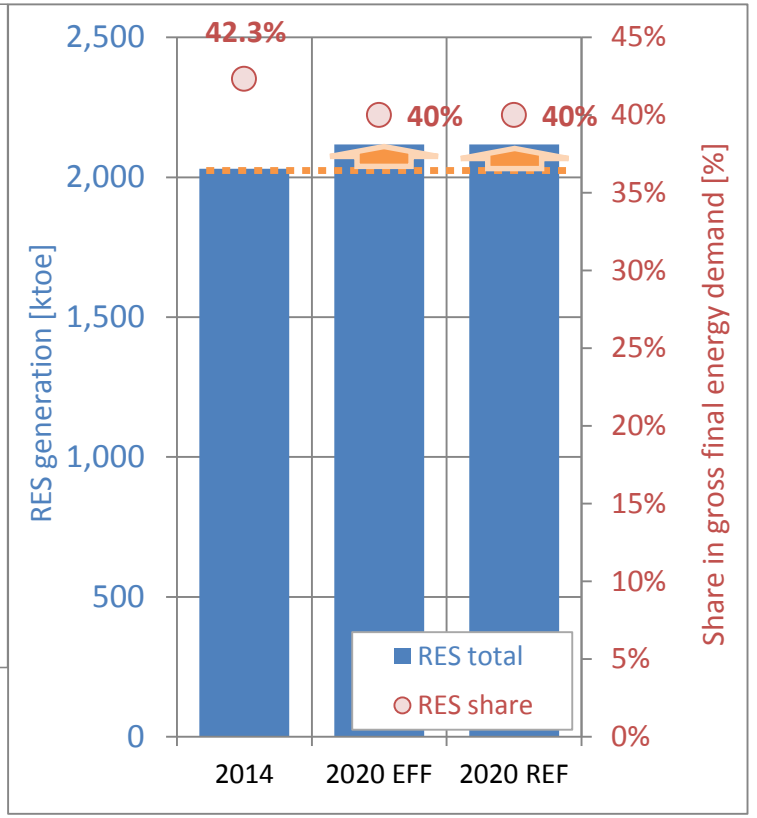


- Support expenditures for RES total (left, top)
- Support expenditures for RES-electricity (left, bottom),
- Generation and cost split by sector (right, bottom)

Bosnia & Herzegovina

The remaining gap in meeting the 2020 RES target





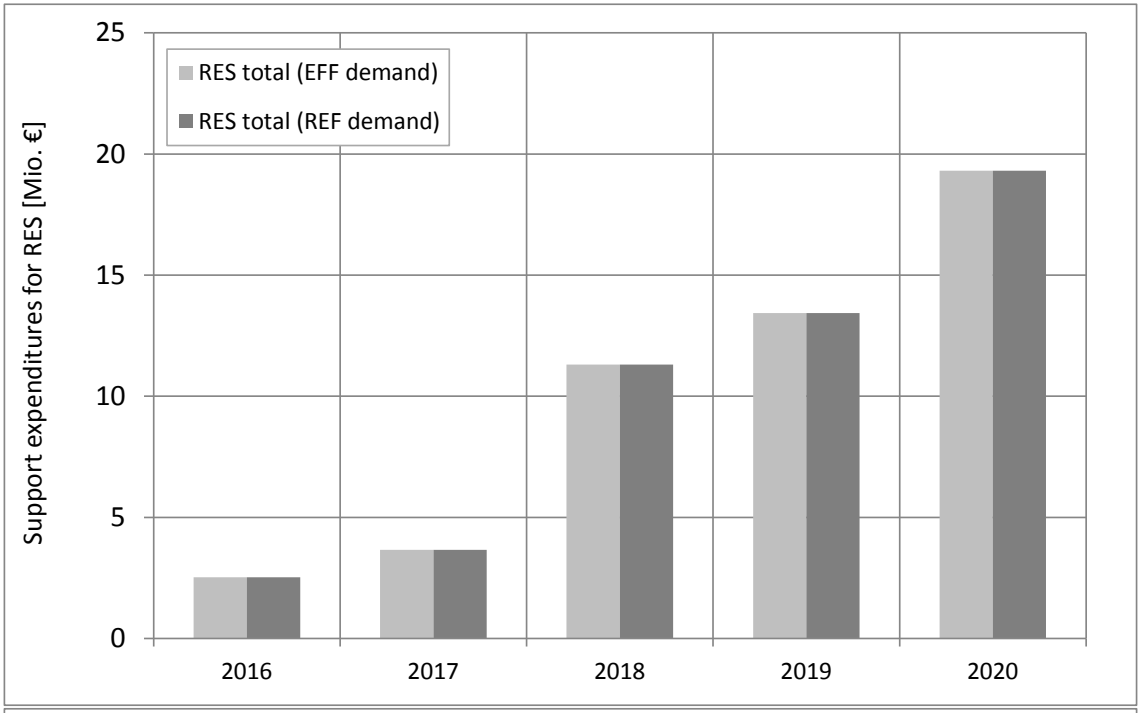
- Historic data on RES use (left), and
- Gap analysis (for meeting 2020 RES target) (right)

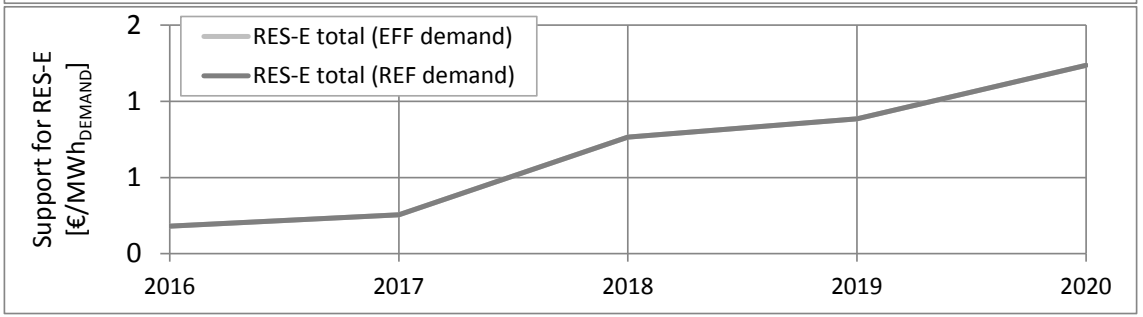
→ Required increase in RES between 2014 and 2020:
87 ktoe

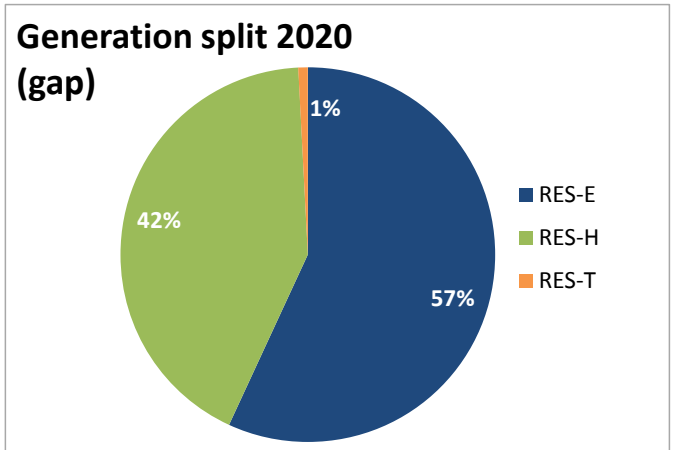
Source: EUROSTAT for historic data, own assessment concerning prospective analysis (Green-X modelling)

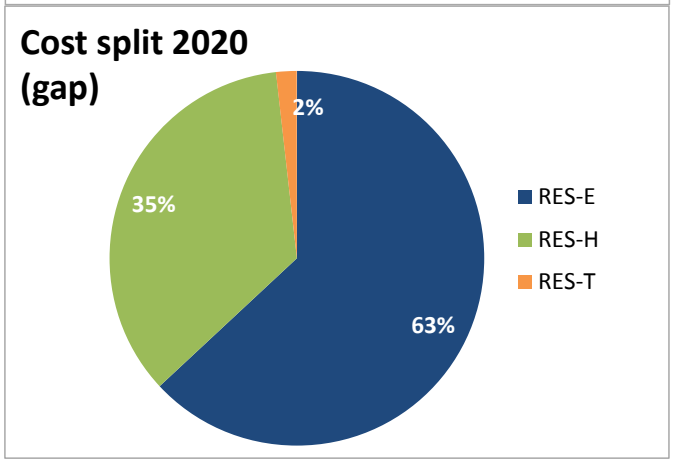
Bosnia & Herzegovina

Estimation of required support expenditures









- Support expenditures for RES total (left, top)
- Support expenditures for RES-electricity (left, bottom),
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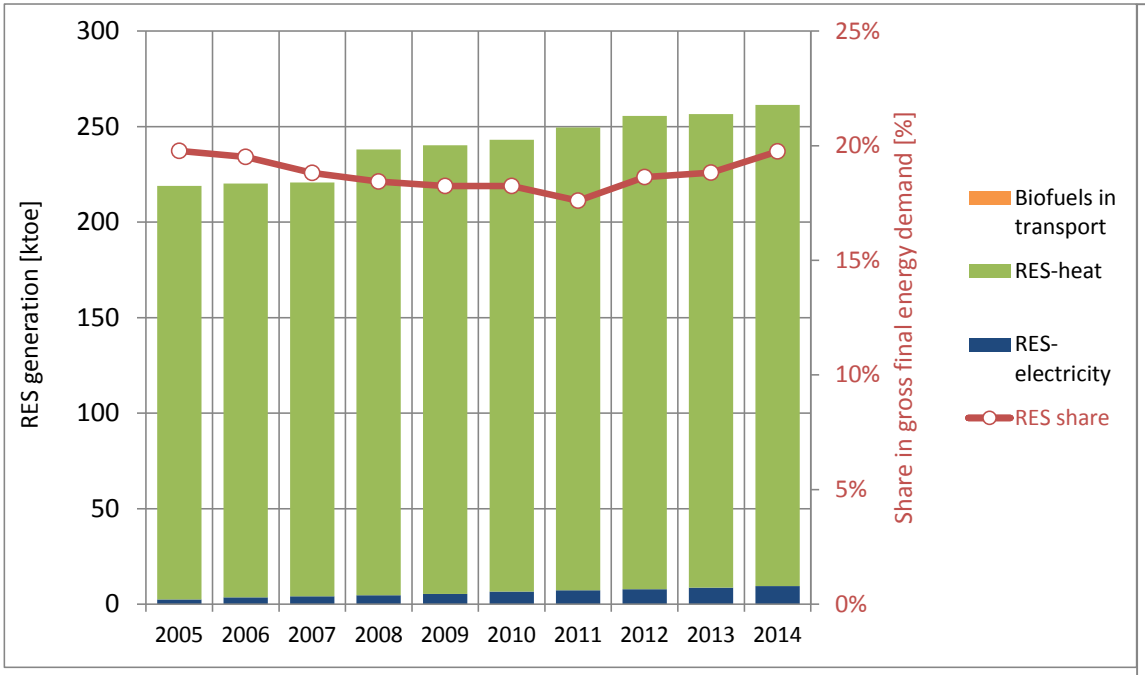
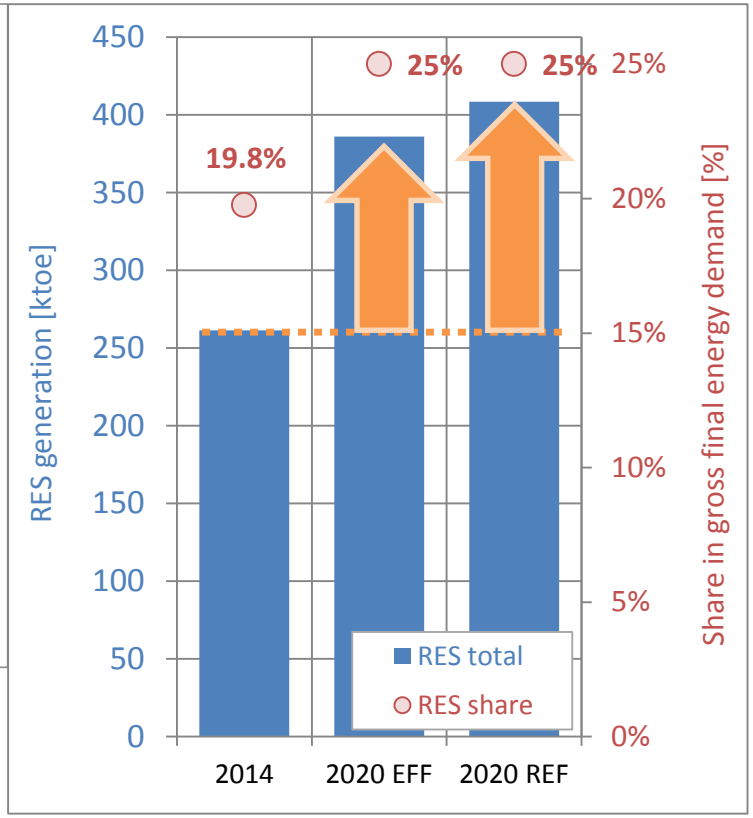
Kosovo*

The remaining gap in meeting the 2020 RES target





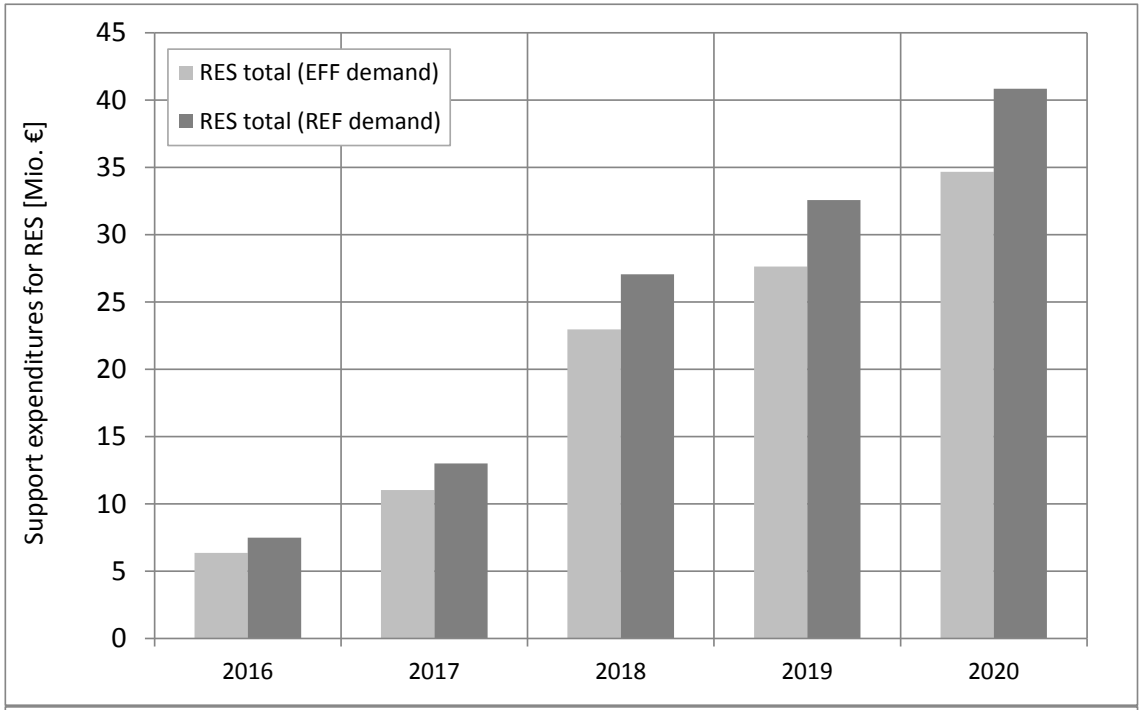
- Historic data on RES use (left), and
- Gap analysis (for meeting 2020 RES target) (right)

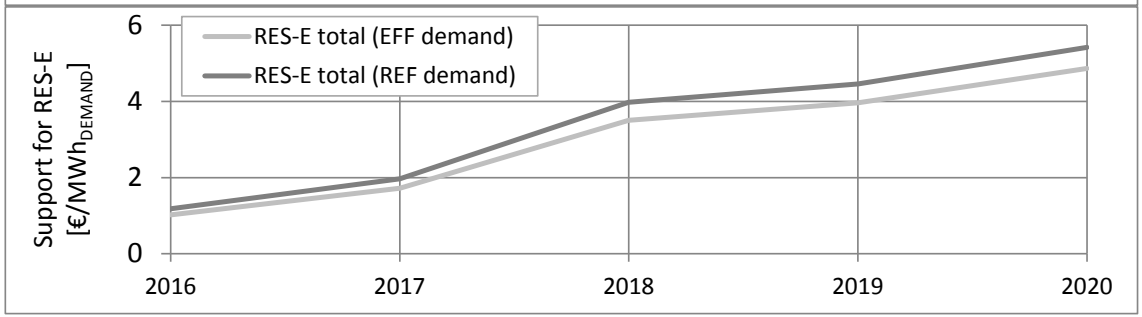
→ Required increase in RES between 2014 and 2020:
125 … 147 ktoe

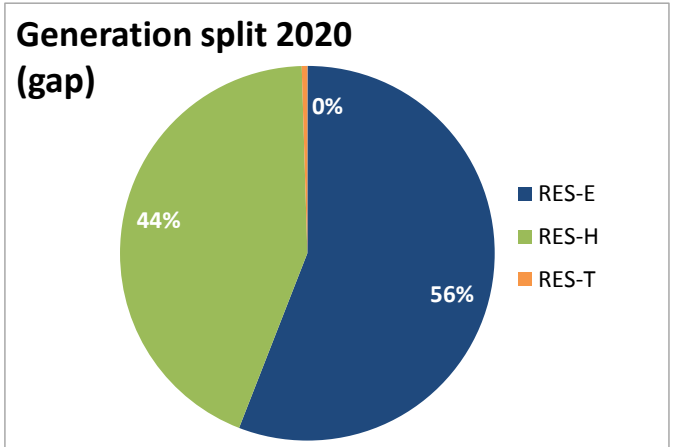
Source: EUROSTAT for historic data, own assessment concerning prospective analysis (Green-X modelling)

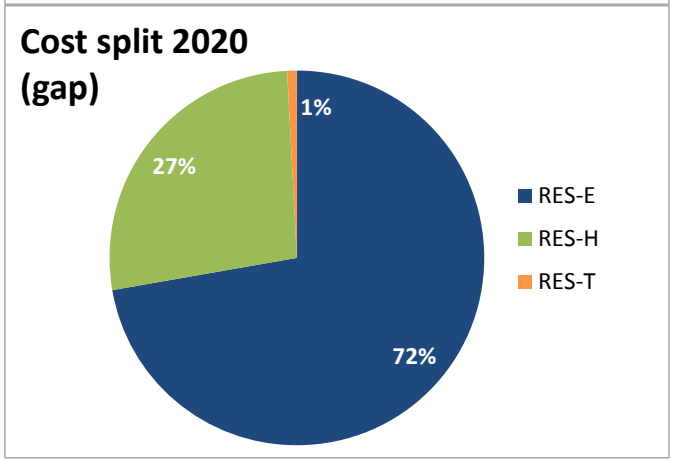
Kosovo*

Estimation of required support expenditures









- Support expenditures for RES total (left, top)
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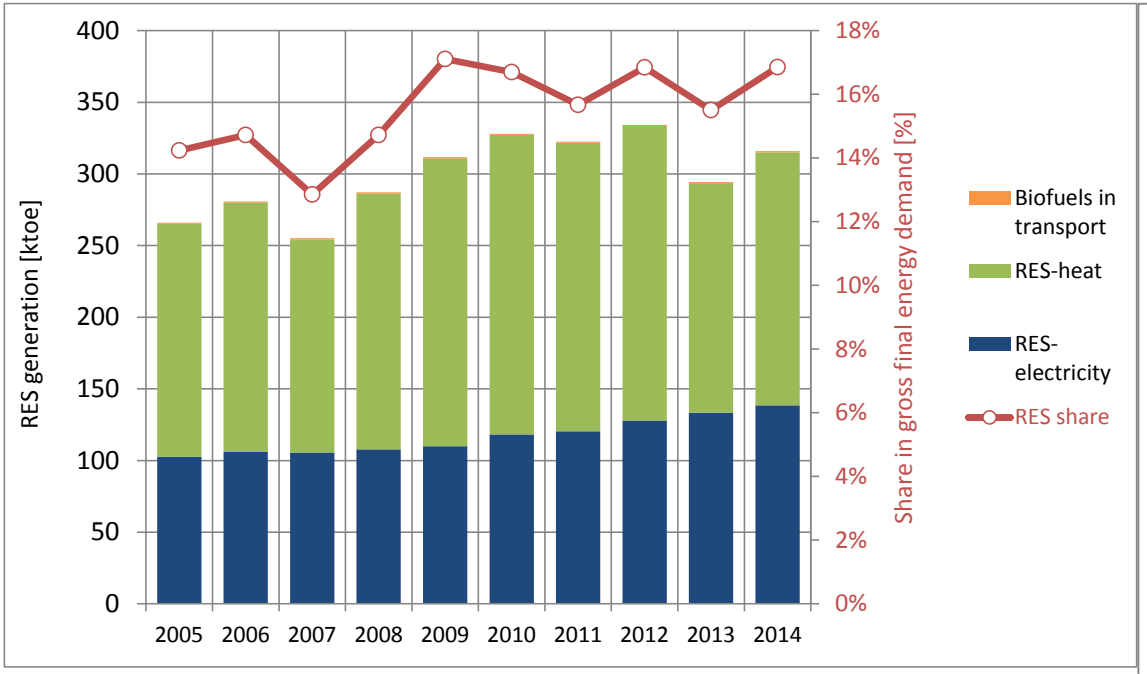
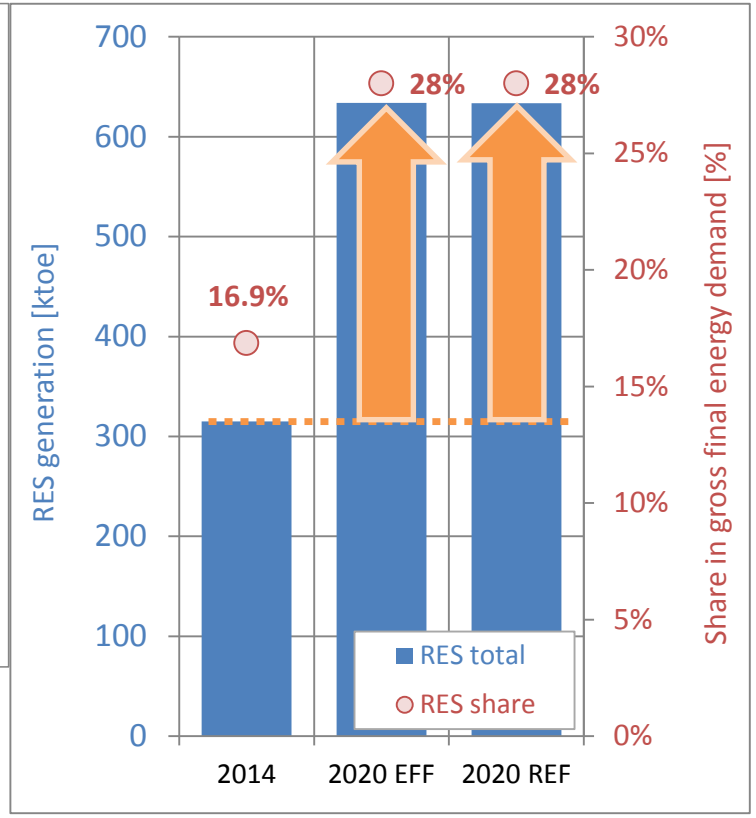
FYR of Macedonia

The remaining gap in meeting the 2020 RES target





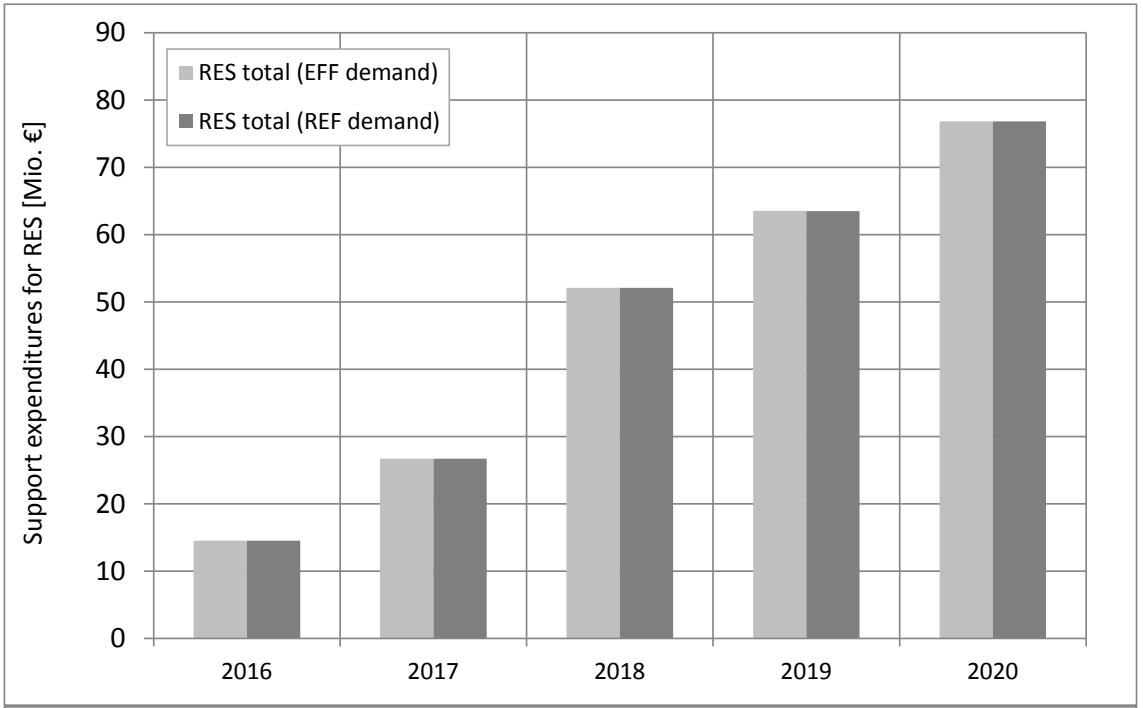
- Historic data on RES use (left), and
- Gap analysis (for meeting 2020 RES target) (right)

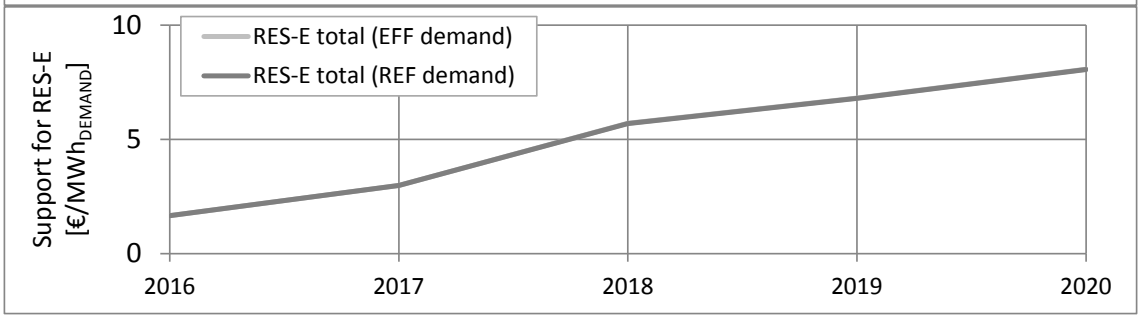
→ Required increase in RES between 2014 and 2020:
319 ktoe

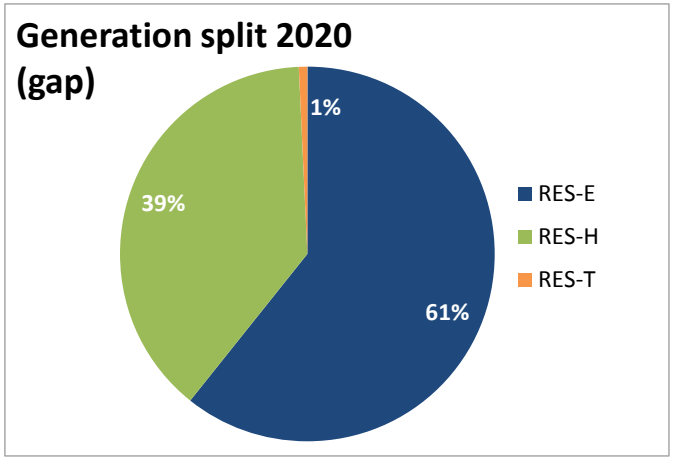
Source: EUROSTAT for historic data, own assessment concerning prospective analysis (Green-X modelling)

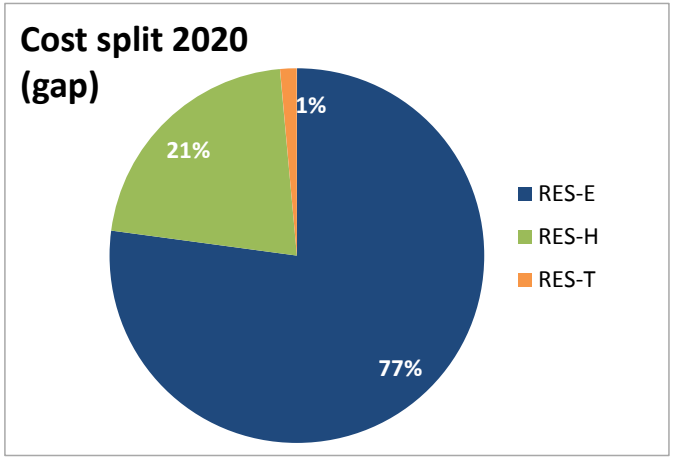
FYR of Macedonia

Estimation of required support expenditures









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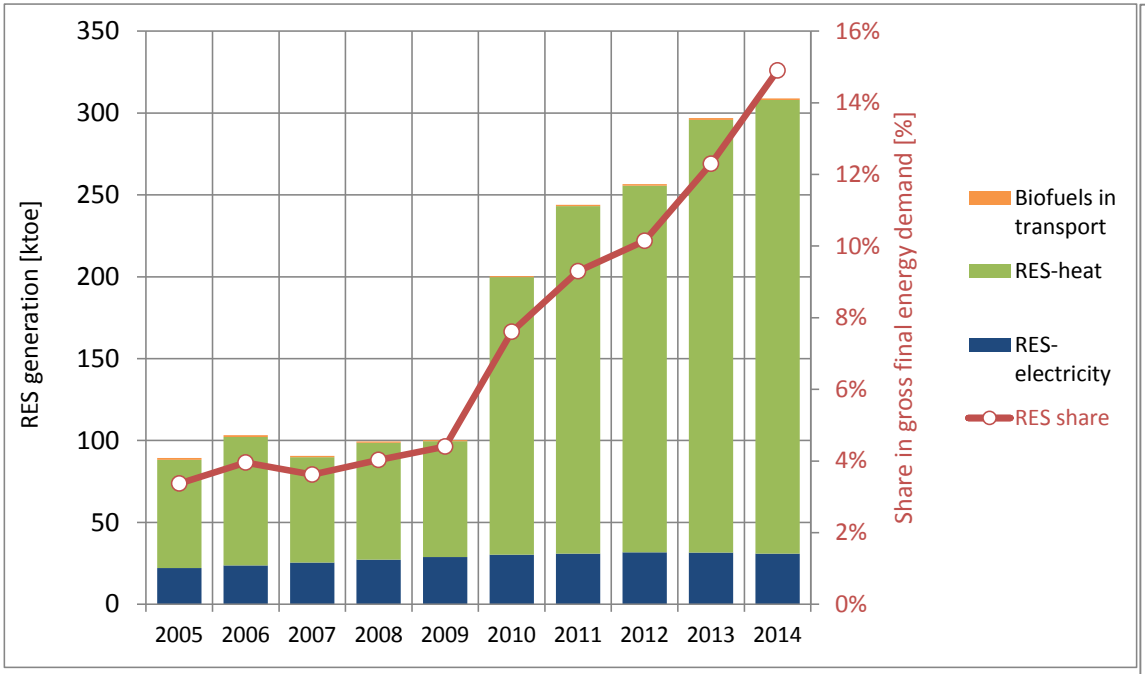
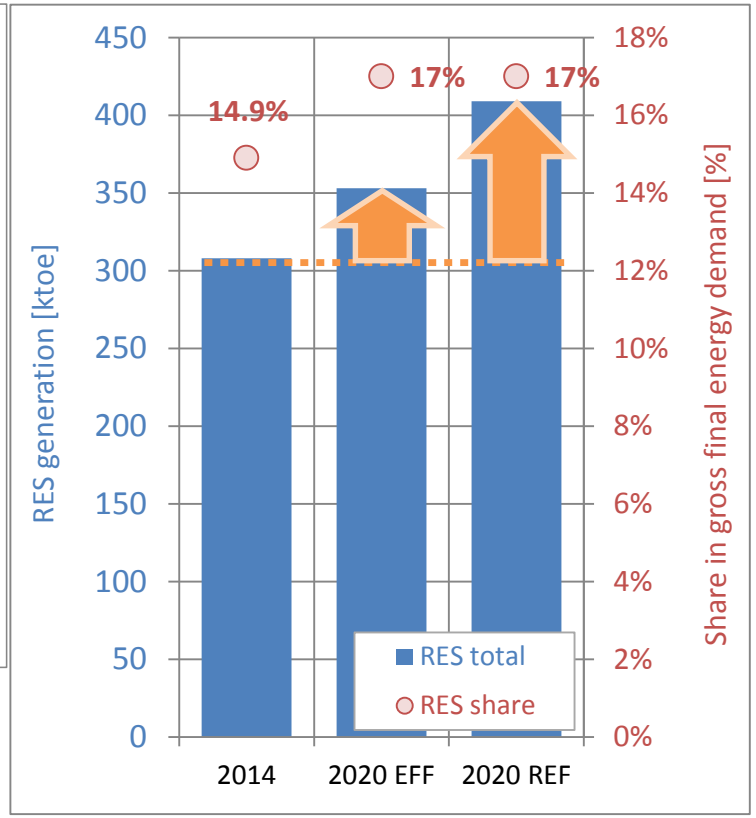
Moldova

The remaining gap in meeting the 2020 RES target





- Historic data on RES use (left), and
- Gap analysis (for meeting 2020 RES target) (right)

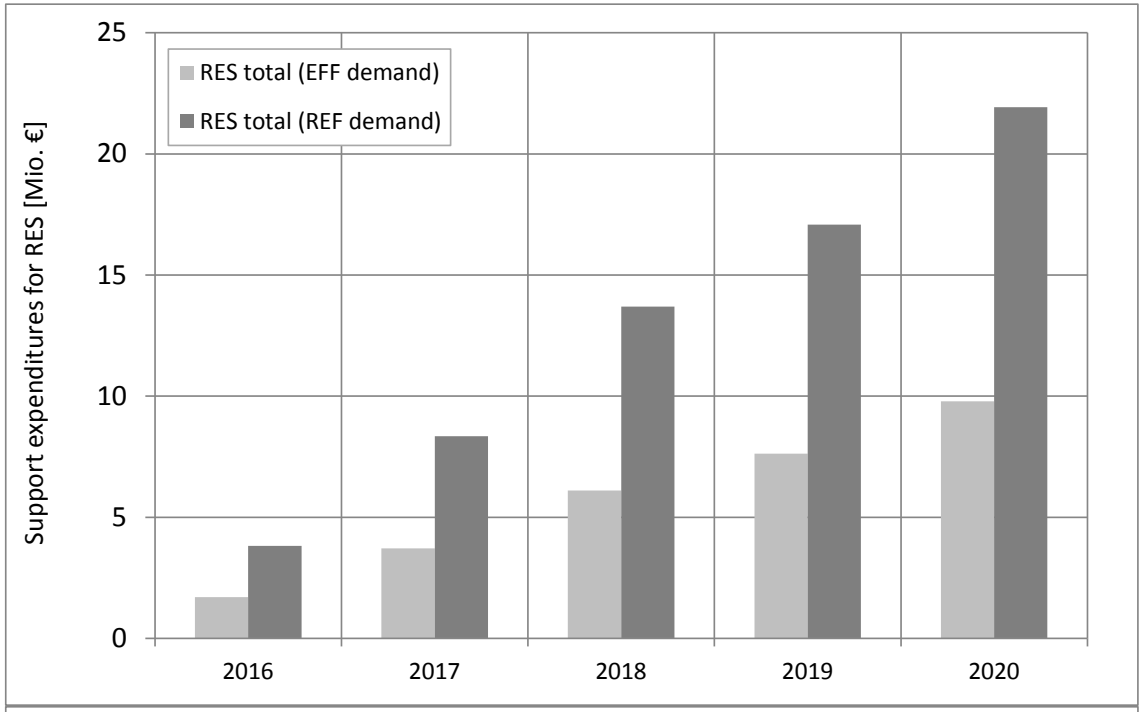
→ Required increase in RES between 2014 and 2020:

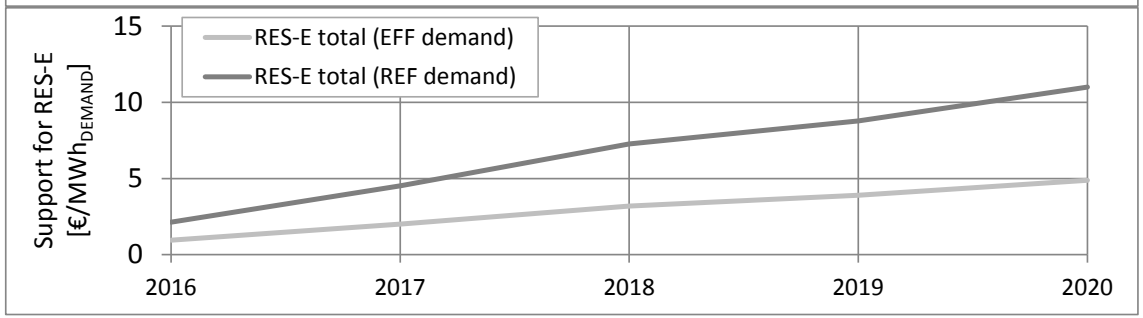
45 … 101 ktoe

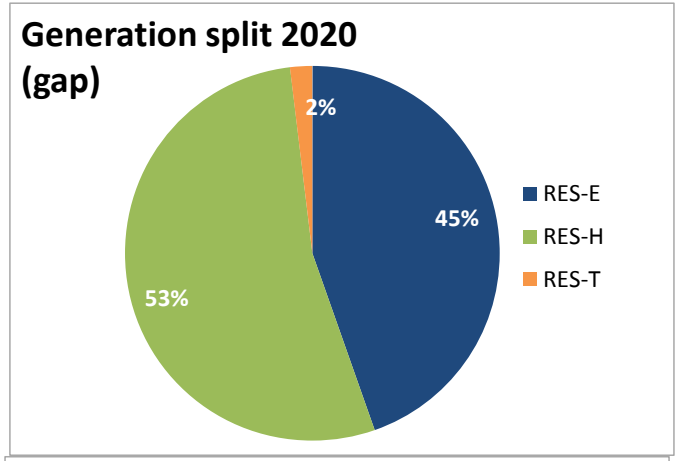
Source: EUROSTAT for historic data, own assessment concerning prospective analysis (Green-X modelling)

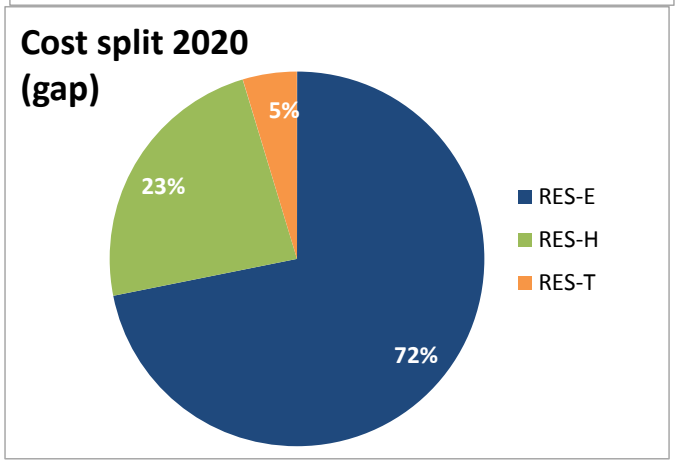
Moldova

Estimation of required support expenditures









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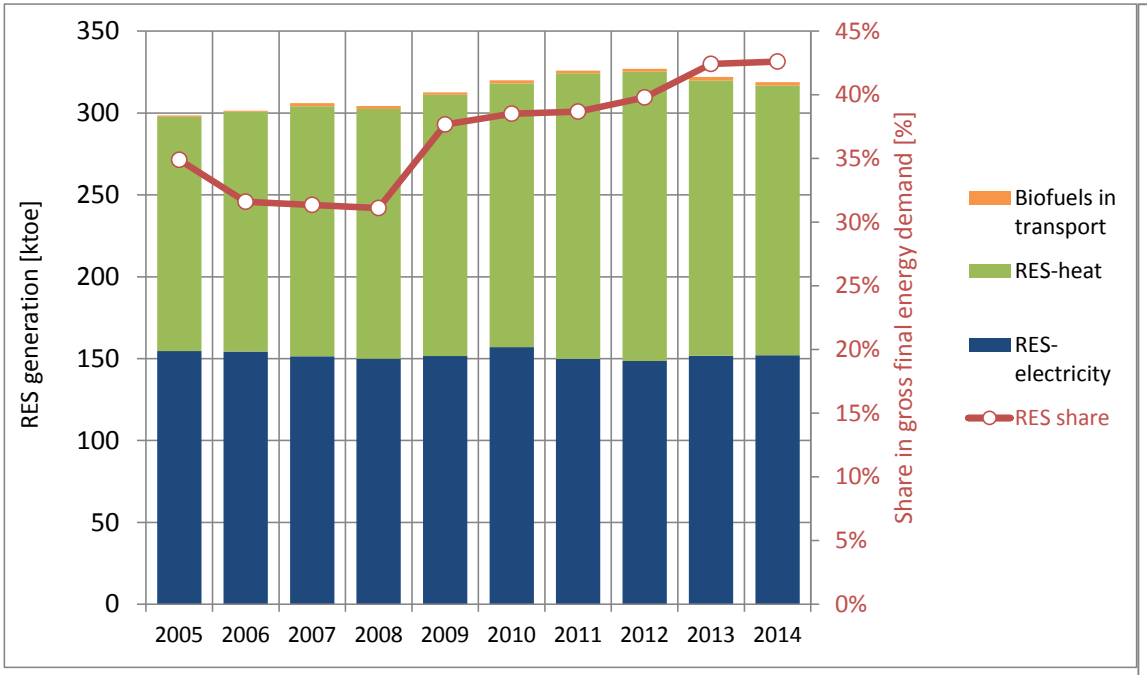
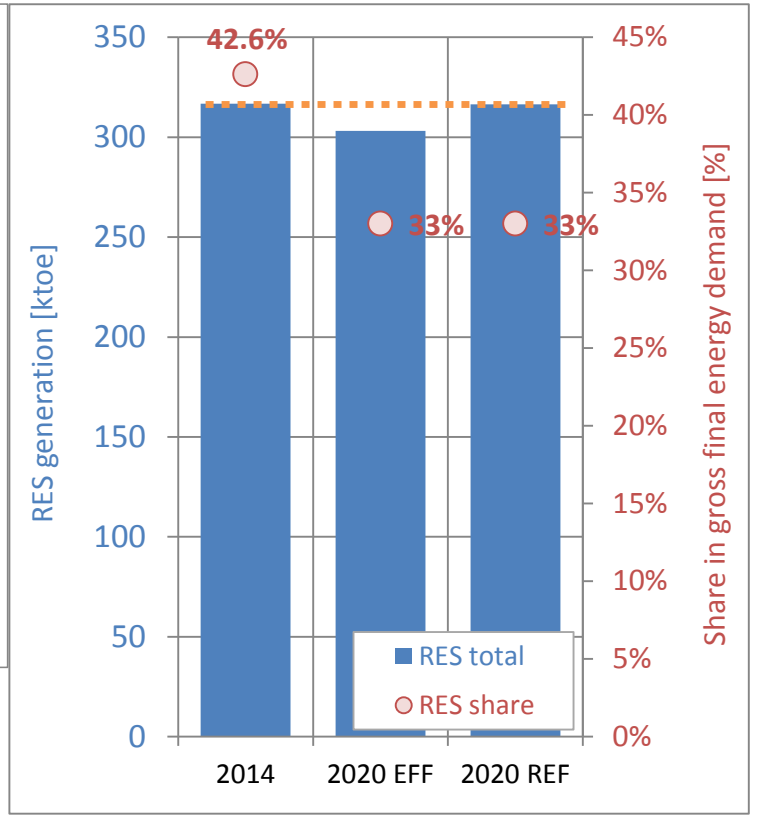
Montenegro

The remaining gap in meeting the 2020 RES target





- Historic data on RES use (left), and
- Gap analysis (for meeting 2020 RES target) (right)

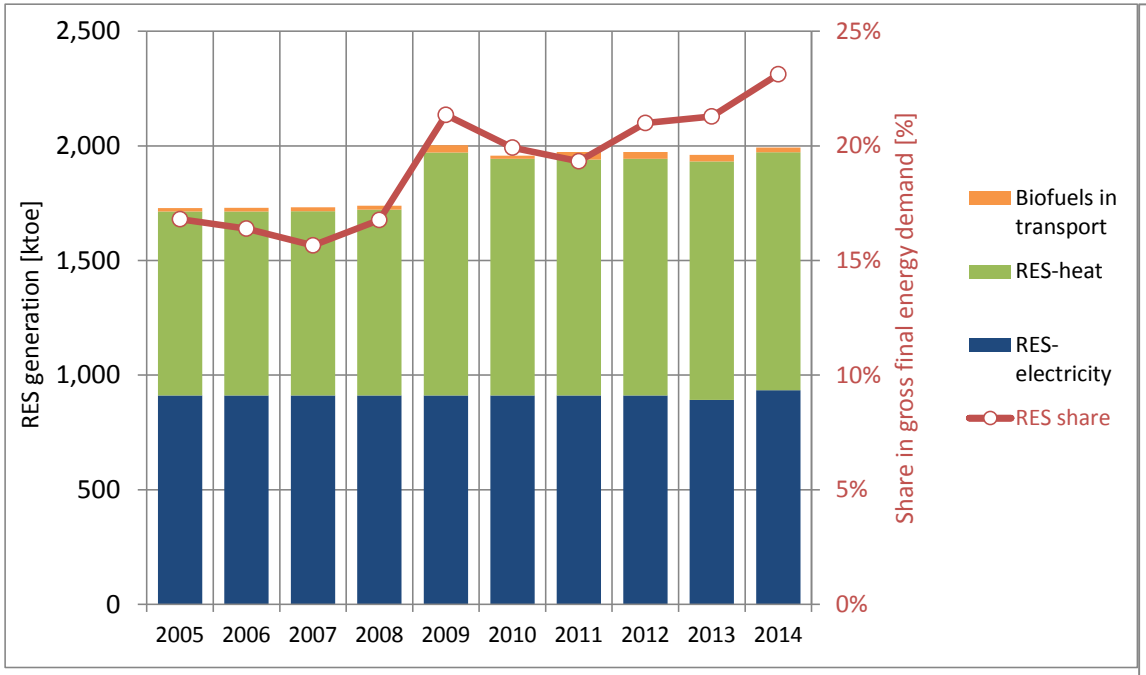
→ Required increase in RES between 2014 and 2020:

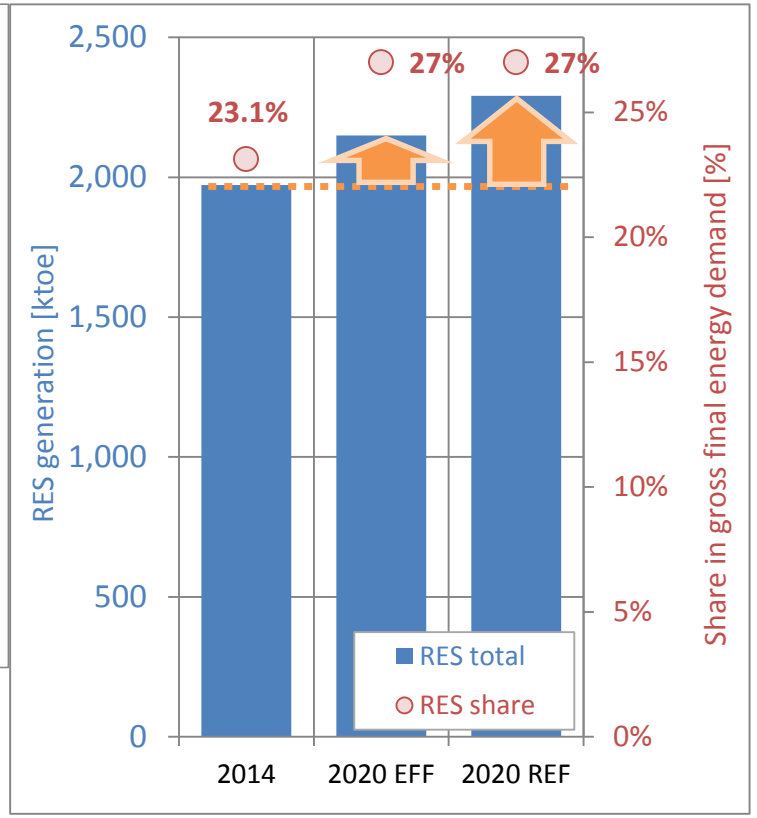
0 ktoe

Source: EUROSTAT for historic data, own assessment concerning prospective analysis (Green-X modelling)

Serbia

The remaining gap in meeting the 2020 RES target





- Historic data on RES use (left), and
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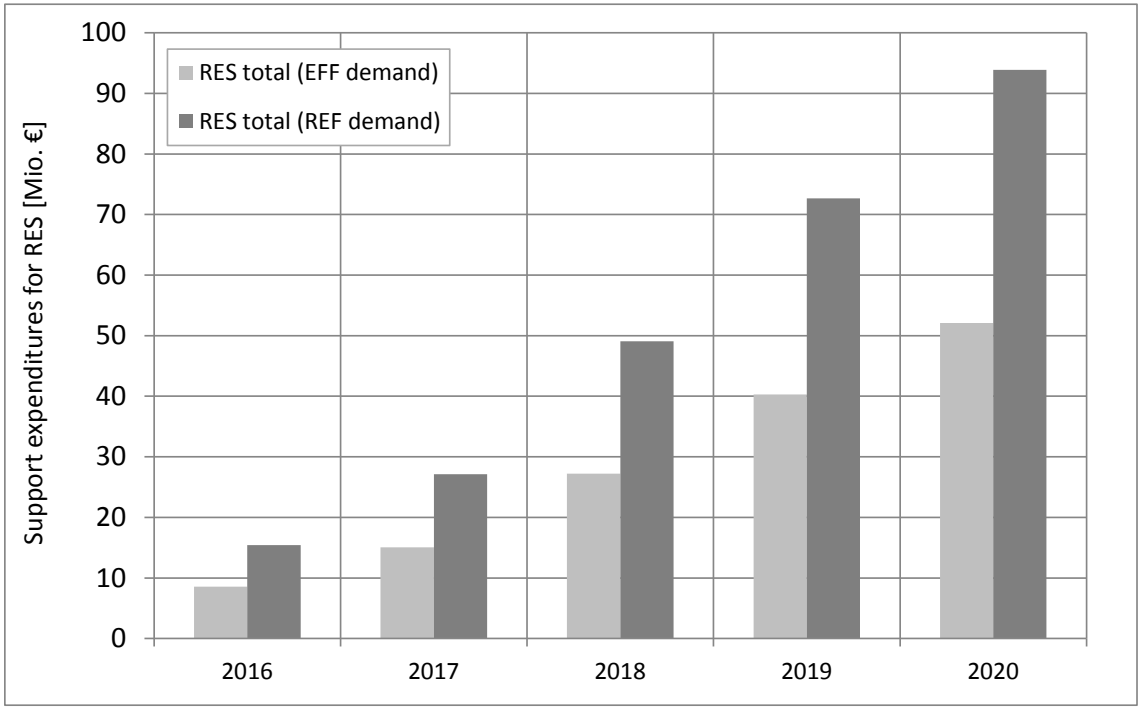
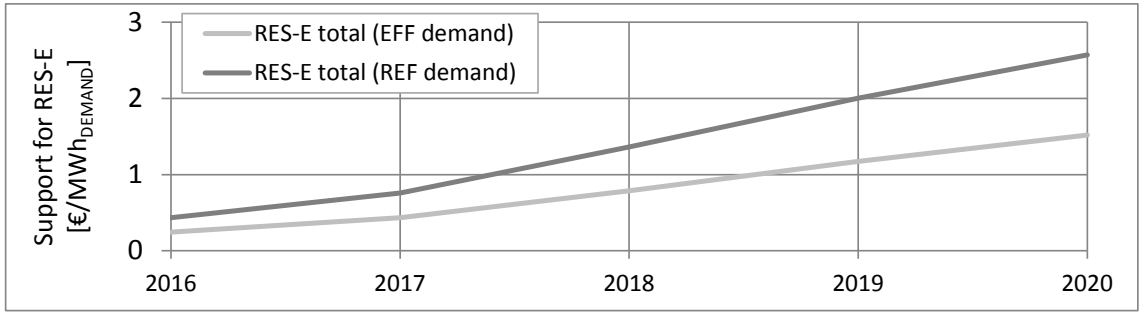
→ Required increase in RES between 2014 and 2020:
177 … 319 ktoe

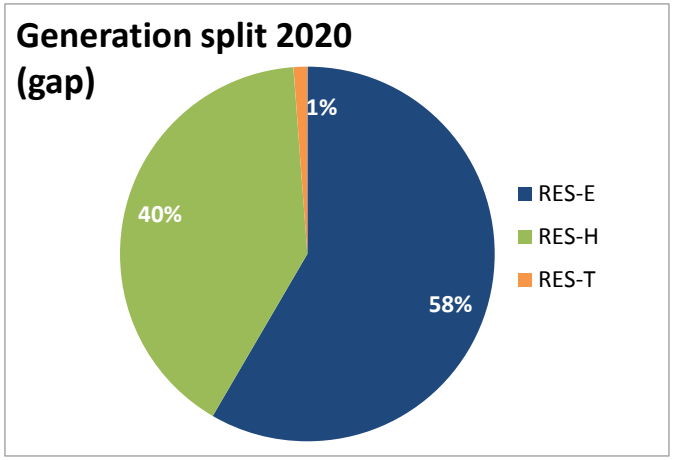
Source: EUROSTAT for historic data, own assessment concerning prospective analysis (Green-X modelling)

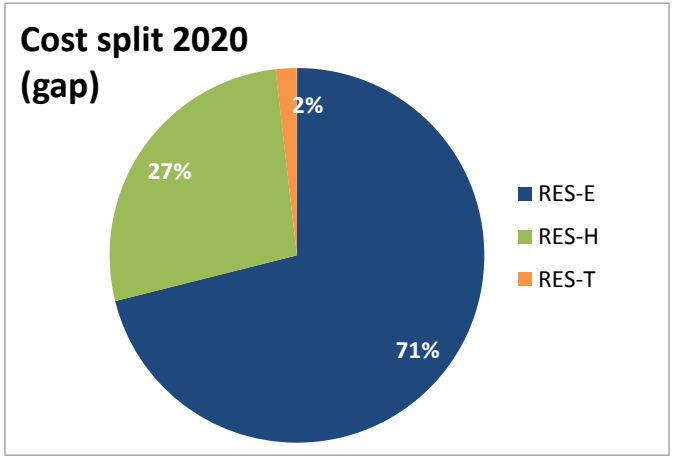
Serbia

Estimation of required support expenditures









- Support expenditures for RES total (left, top)
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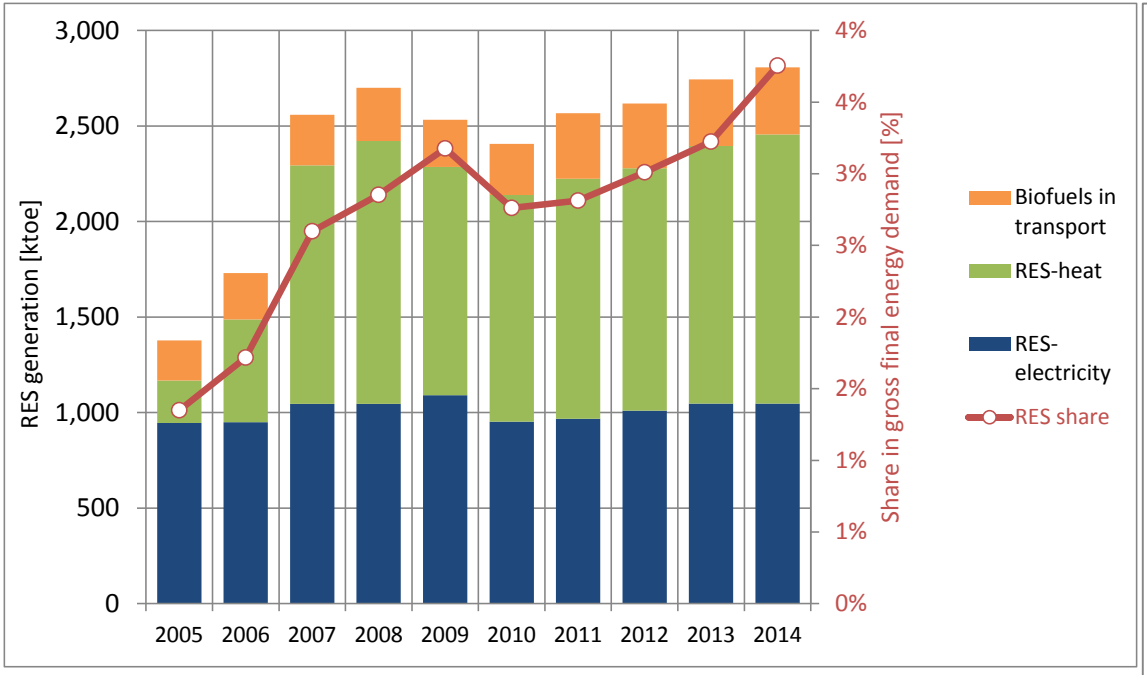
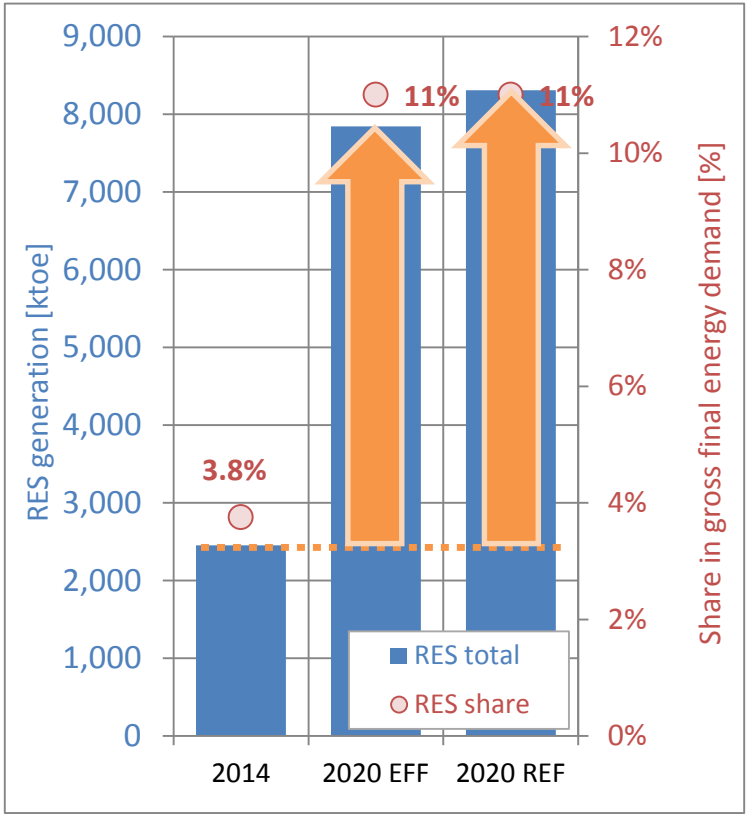
Ukraine

The remaining gap in meeting the 2020 RES target





- Historic data on RES use (left), and
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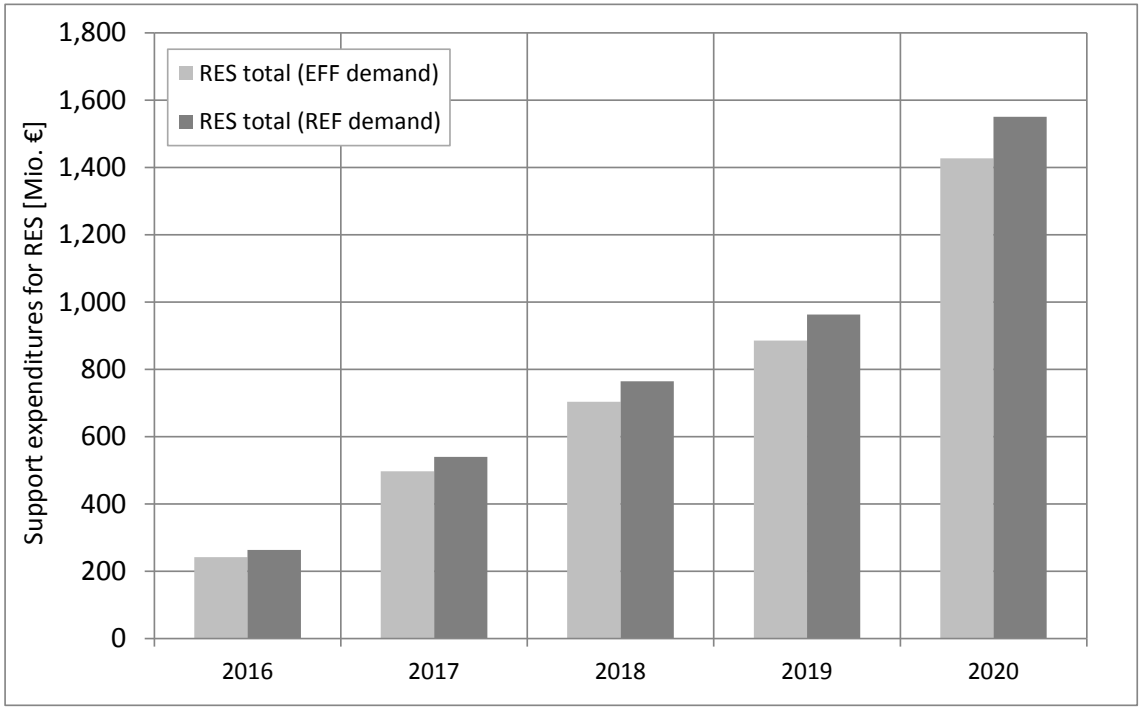
→ Required increase in RES between 2014 and 2020:

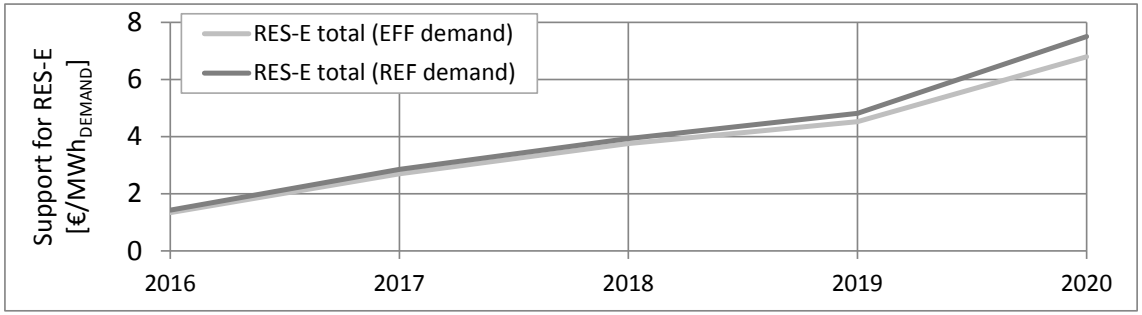
5.4 … 5.9 Mtoe

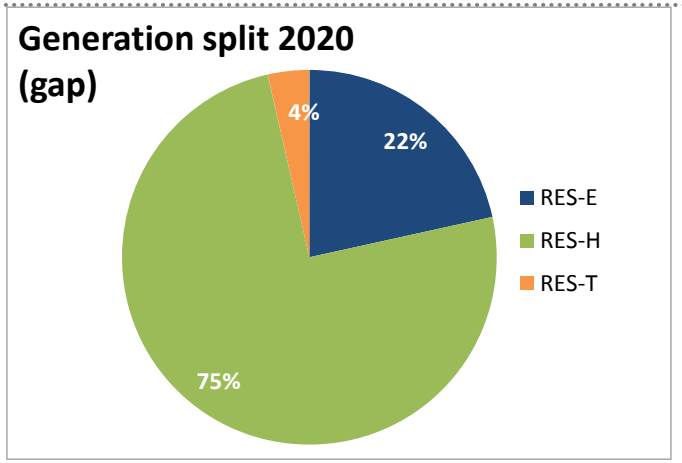
Source: EUROSTAT for historic data, own assessment concerning prospective analysis (Green-X modelling)

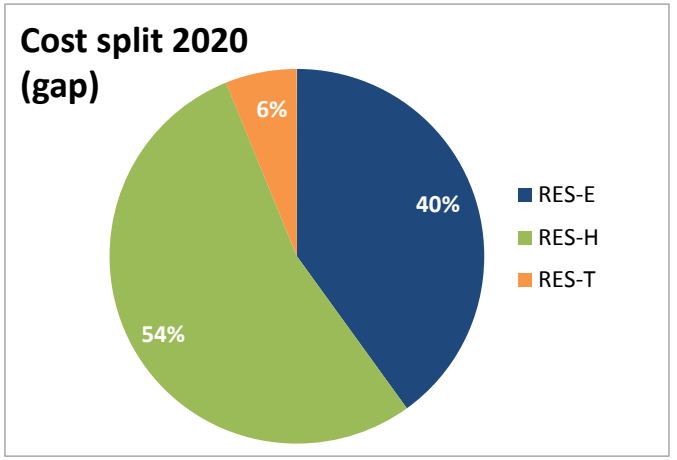
Ukraine

Estimation of required support expenditures









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Concluding remarks

- Strengthening and continuous fine tuning of policy instruments is needed, providing adequate support to RES technologies that will contribute to 2020 RES target

- Speed up efforts to remove non-cost barriers that are hindering RES technologies that are necessary for achieving the 2020 RES target, in particular there is a strong need to increase efforts to simplify administrative procedures

Interested in the 2030 RES policy discussion?

→ **www.towards2030.eu**

Thanks for your attention!

Issue Paper No. 2:* Implementing the EU 2030 Climate and Energy Framework – a closer look at renewables and opportunities for an Energy Union

Issue Paper No. 4 on **benchmarks** to facilitate sharing the renewables effort

platform towards2030

Interested in the dialogue process?

→ **http://platform.towards2030.eu**