

The Experience in Western Macedonia

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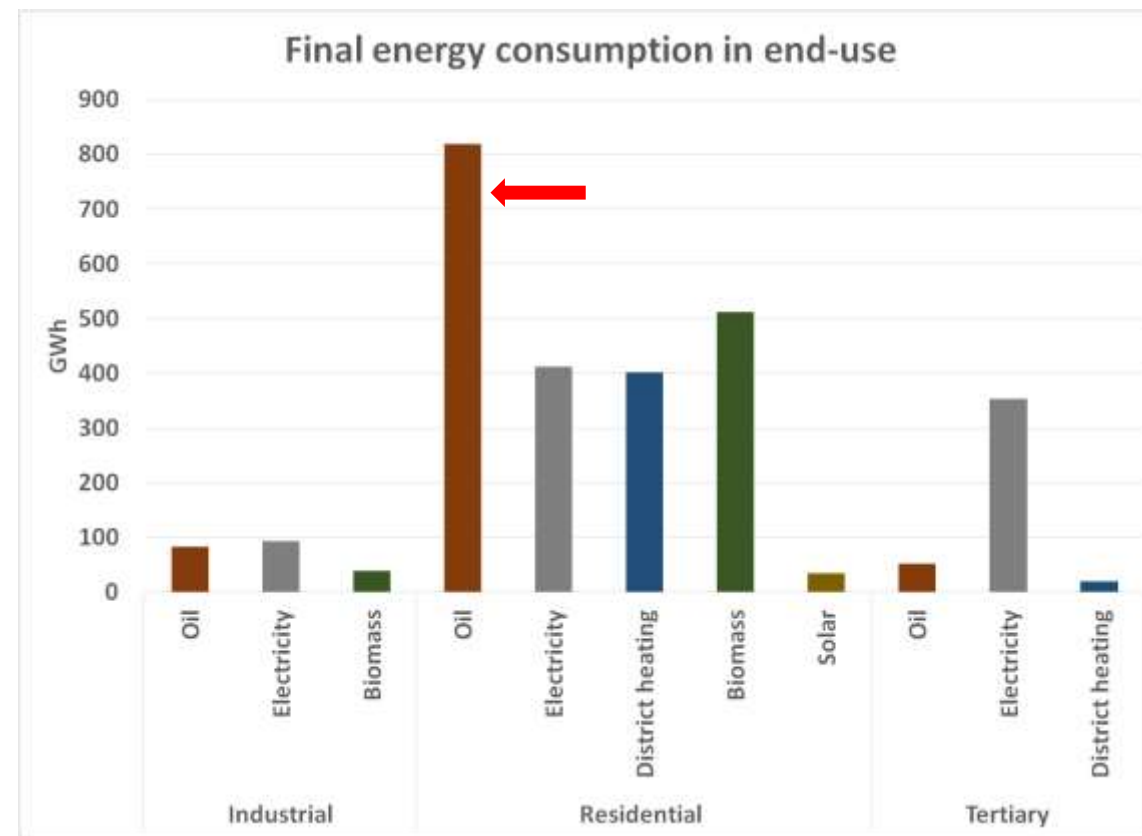
CRES

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Western Macedonia

- Policy formulation at national level
- Combination of mountainous and forests areas
- Low population density
- Highest heating demand in Greece
- Intensification of energy poverty problem
- Priority the further exploitation of the lignite resources
- High penetration of district heating
- High RES potential

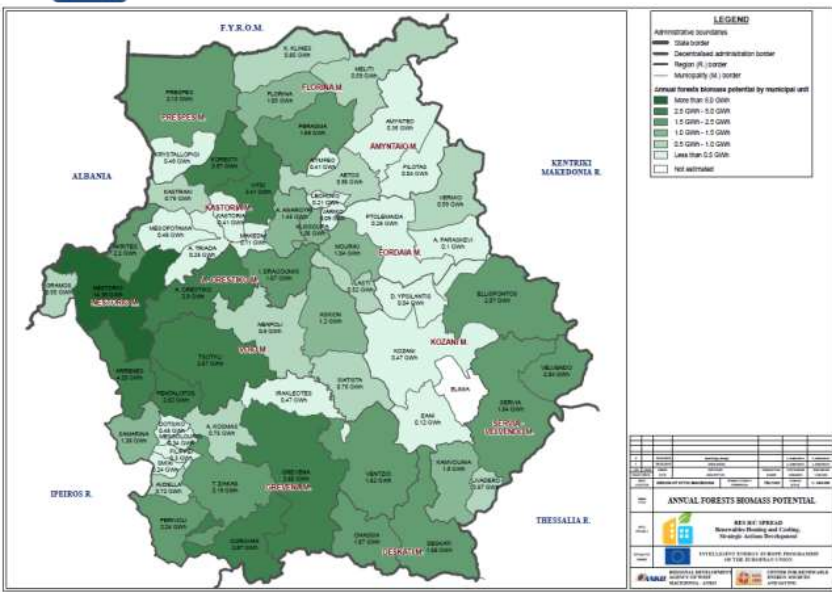
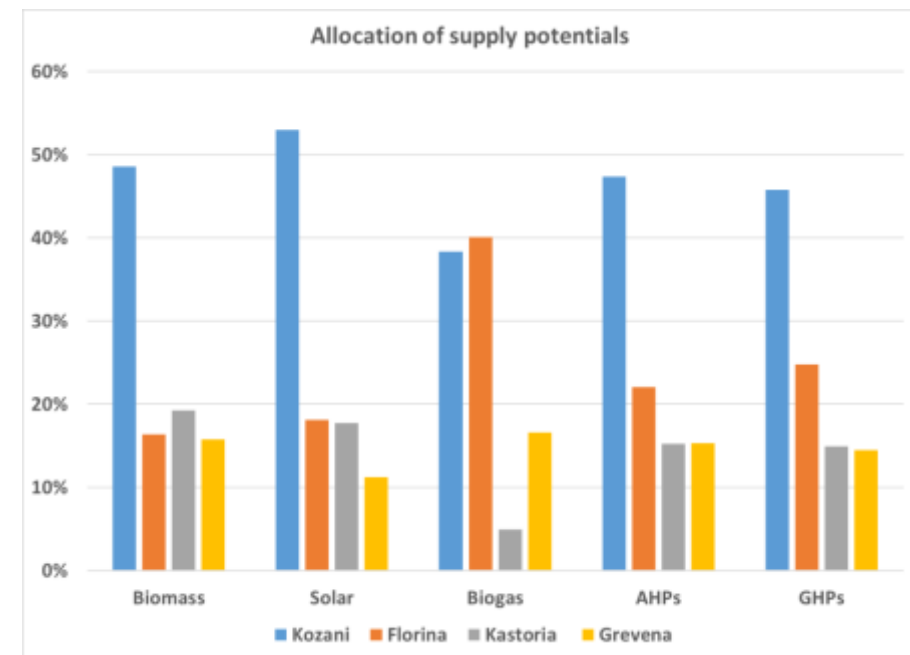


Challenges as starting point...

- Confront the lack of statistical data and homogenize the conducted studies and the proposed policies into a common policy framework.
- Exploit the high RES potential in conjunction with the existing lignite resources and the district heating network.
- Reinforce the role of the regional authority during the design and implementation of efficient policies.
- Promote the cost-benefit analysis for the assessment of the potential policies justifying the social profitability.
- Integrate the H-C plan into an integrated energy planning framework at regional level.
- Utilize the H-C plan as an effective tool from the administration authority of the Regional Operational Program for the formulation and financing effective policy measures until 2030.

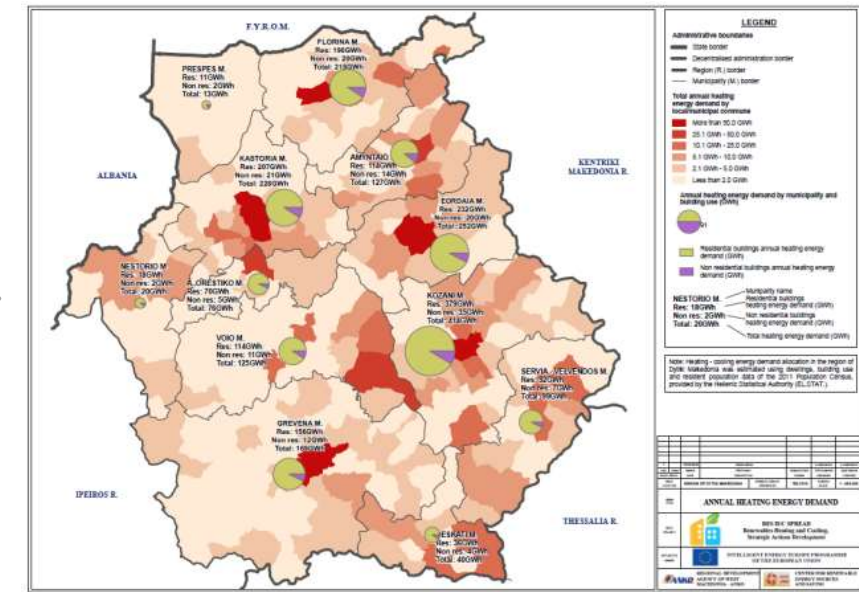
RES potential

- Step 1**
 - Bibliographical review
 - Preliminary assessment of the available RES
- Step 2**
 - Collection of input data
 - Development of methodological approach
- Step 3**
 - Estimation of H&C demand and RES potential
 - Comparison with existing estimations
 - Development of the corresponding maps



Supply
(biomass,
DHW, biogas,
HPs)

Demand
(heating and
cooling)



The Country Governance Committees in Western Macedonia

- Continuous and active participation of the CGC's members.
- Positive evaluation of the implemented CGC's meetings.
- Effective involvement of all the administrative levels (national, regional and local governance levels).
- Provision of essential and beneficial comments and proposals facilitating the applicability and the effectiveness of the foreseen policies.
- Contribution to the improvement of the utilized methodology through the conduction of CBA according to the requirements of Art. 14 of the EED and the quantification of additional externalities expanding the operational framework of the CBA.



Policy and strategies to achieve the potential in Western Macedonia

Measure	Objective	Financial mechanism
M1. Installation of co-firing biomass and lignite boilers in the existing district heating network	Installation of two boilers until 2020 with total capacity of 30 MWth	15 million € (NSRF 2014-2020)
M2. Installation of biomass boilers in the existing district heating network	Installation of two boilers until 2020 with total capacity of 35 MWth	17.5 million € (NSRF 2014-2020)
M3. Promotion of autonomous high-efficient biomass boilers in households	Installation of 10,000 boilers in residential buildings until 2030	40 million € (NSRF 2014-2020 and Energy Service Companies)
M4. Installation of a biogas CHP plant	Installation of a biogas CHP plant with total capacity of 0.5 MWe	2.5 million € (Cooperative enterprise or private funds)
M5. Installation of a biomass CHP plant	Installation of a biomass CHP plant with total capacity of 3.8 MWe	17.3 million € (Cooperative enterprise or private funds)
M6. Promotion of solar thermal system for domestic hot water production	Installation of 40,000 solar thermal systems in residential buildings until 2030	31.2 million € (NSRF 2014-2020 and Energy Service Companies)

- ✓ **The penetration of RES will be increased from 21% in 2012 to 34% in 2030 in the residential and tertiary sectors.**
- ✓ **10% of the foreseen interventions have to be implemented in energy poor households.**


What's next?

- Development of a specialized monitoring mechanism for the fulfillment of the imposed targets as derived by the RES H-C plan.
- Evaluation of the RES H-C plan's progress annually and conduction of the appropriate adjustments in the case of potential deviations.
- Development of a reliable and effective data collection system.
- Quantification of additional externalities either positive or negative.
- Continuation of the CGC identifying the most cost-effective framework for the participation of the involved members.
- Replication of the CGC concept to the other regions updating and improving the already submitted comprehensive assessment according to Article 14 of the EED.
- Completion of the missing data especially for the industrial sector enhancing the the robustness and consistency of the obtained results and expanding the current framework of the existing RES H-C plan.

Thank you for your attention!

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