



# INVITATION

Workshop on

## Agro-residues at the crossroads towards 2030

European Parliament, room ASP 5E3  
May 17, from 12:30-14:00

Hosted by:

Marijana Petir



Paolo De Castro



Organized by:



Co-Organized by:



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 691748

**Agro-pruning in Croatian context – creating synergy between EAFRD and RED**

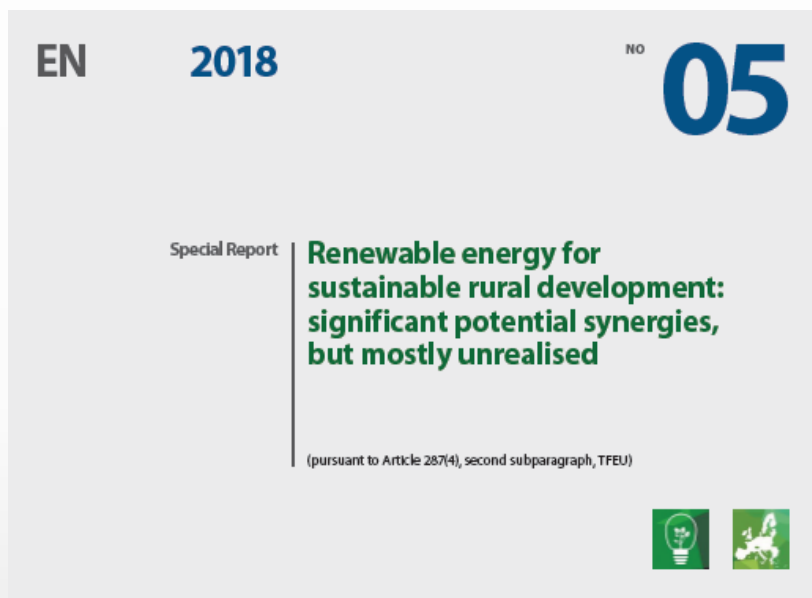
Biljana Kulisic, Energy Institute Hrvoje Požar, Croatia



CitY of  Vienna

Part-financed by the European Union and the City of Vienna

# European Court of Auditors (1/3/2018)



- Using more RES is crucial to reduce the EU GHG emissions and its dependence on fossil fuels and imported energy and thus contribute to the security of its energy supply.
- RES can play an important role as a driver of sustainable development in rural areas.

**In our audit, we found that there are potential synergies between RES policy and funds designated to facilitate sustainable development, but that these synergies remain mostly unrealised.**

- The EU's RES policy is not explicit enough in establishing the conditions for linking RES to rural development successfully.
- The specific funding available for rural development could play a role in achieving EU and national RES targets, but Member States did not always prioritize RES projects that could make a contribution to sustainable rural development.

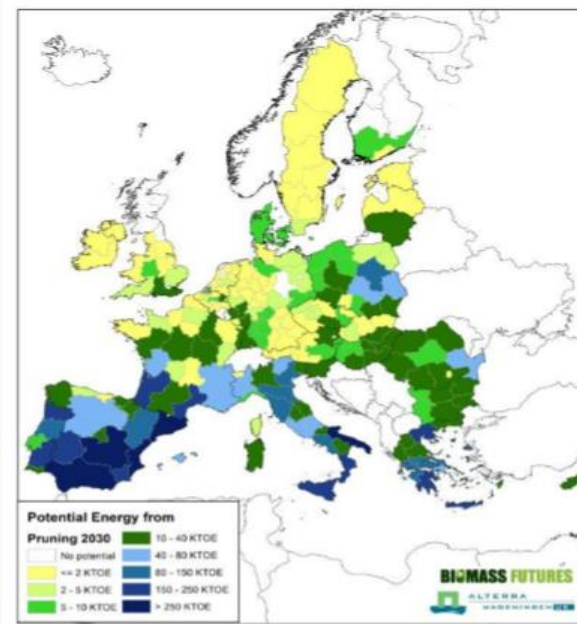
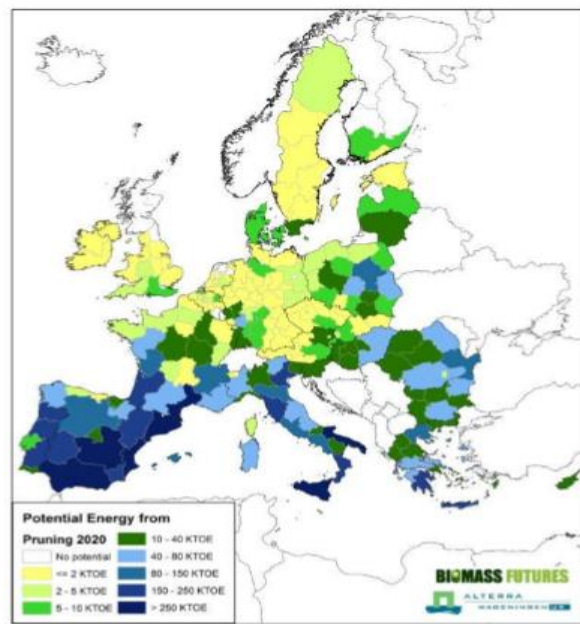
Available at: <https://www.eca.europa.eu/en/Pages/DocItem.aspx?did=44963>

# ECA's recommendations:

1. **When designing their future renewable energy policy**, the Commission and the Member States should take into **account the circumstances and needs of rural areas**, in particular when setting up the **integrated national energy and climate plans**.
2. The Commission, together with the co-legislators, should design the **future policy framework** for bioenergy in a way that provides for better safeguards **against the unsustainable sourcing of biomass for energy**.
3. The Commission should specify the **purpose and role of EAFRD support for investments in renewable energy**.
4. With regard to EAFRD support for renewable energy, the Commission should require the Member States to **provide pertinent information on programme achievements of renewable energy projects** in their enhanced annual implementation reports of 2019.
5. The Commission should reinforce with the Member States the need to apply relevant selection procedures, in order **to give support only to viable renewable energy projects with a clear benefit for sustainable rural development**.

# How to apply ECA's recommendations on agro pruning?

## Cuttings-prunnings 2020 and 2030



- **Case study Croatia (HR)**

HR: 0.052 Mtoe  
(0.52-0.58% EU)

= 1% of total primary energy production  
(4% woodfuels and biomass OR  
8% crude oil)

= 1% of total energy imports  
(3% petroleum products)

Elbersen (2012): Atlas of biomass supply for 2020 and 2030 from EU27; Available at:  
[http://www.biomassfutures.eu/public\\_docs/workshops\\_2012/20\\_march\\_2012/lunch\\_seminar/Atlas%20of%20biomass%20supply%20for%202020%20&%202030%20Elbersen.pdf](http://www.biomassfutures.eu/public_docs/workshops_2012/20_march_2012/lunch_seminar/Atlas%20of%20biomass%20supply%20for%202020%20&%202030%20Elbersen.pdf)

2. The Commission, together with the co-legislators, should design the **future policy framework** for bioenergy in a way that provides for better **safeguards against the unsustainable sourcing of biomass for energy.**

- Primary energy from agro pruning (solid biomass) to

## 1. renewable energy

- Direct combustion: **HEAT** (heating, hot water preparation, steam, DH...)
- Combustion in high efficient cogeneration plants ( $\eta > 80\%$ ):  
**HEAT&ELECTRICITY** (~ratio 75:25)

## 2. renewable fuels for energy markets:

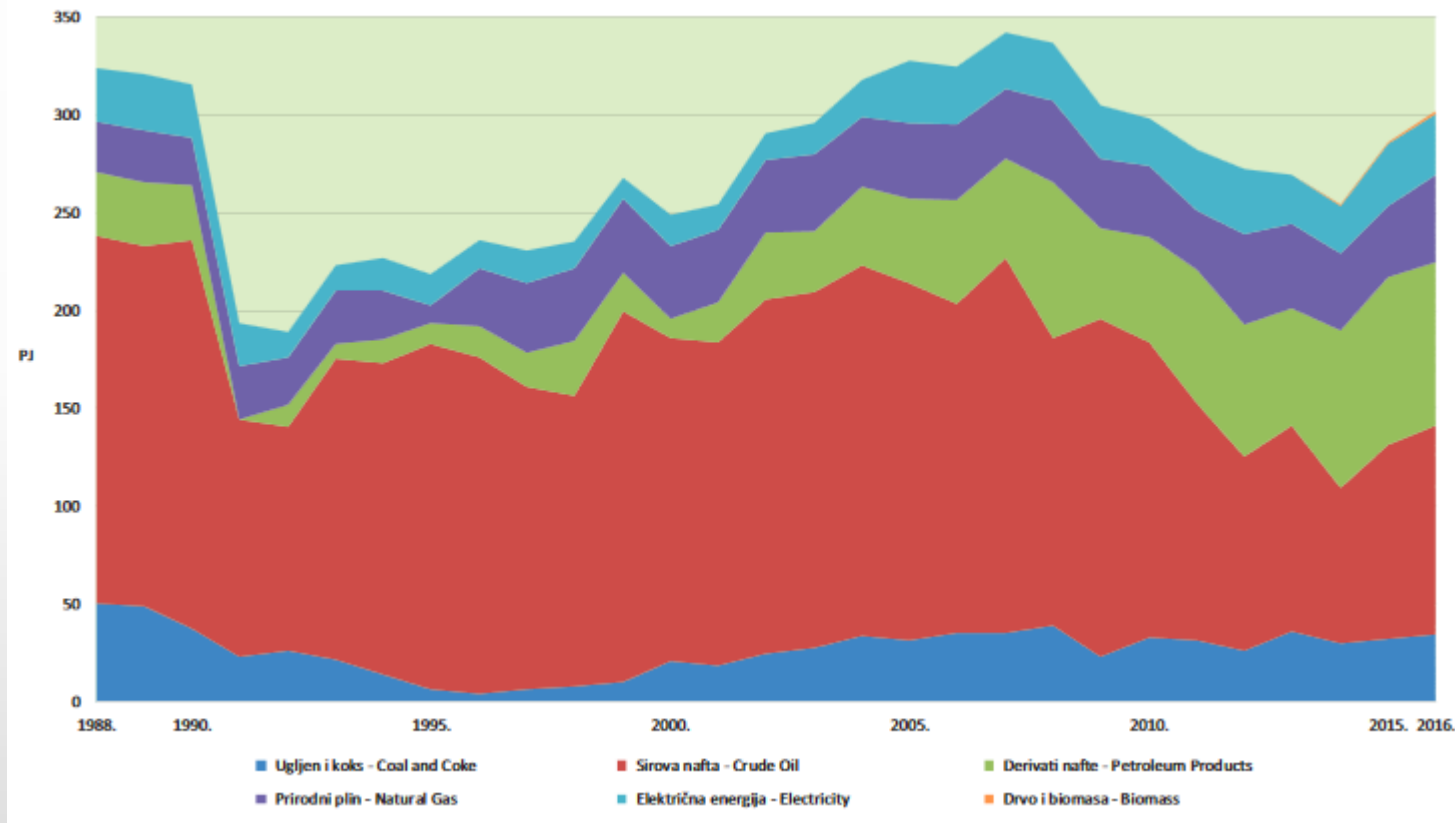
- Pyrolysis for **biochar, syngas and biooil/biodiesel 2G**
- Wood gasification for **syngas**

# 1. When designing their future renewable energy policy, the Commission and the Member States should take into account the circumstances and needs of rural areas, in particular when setting up the **integrated national energy and climate plans**.

National energy plan:

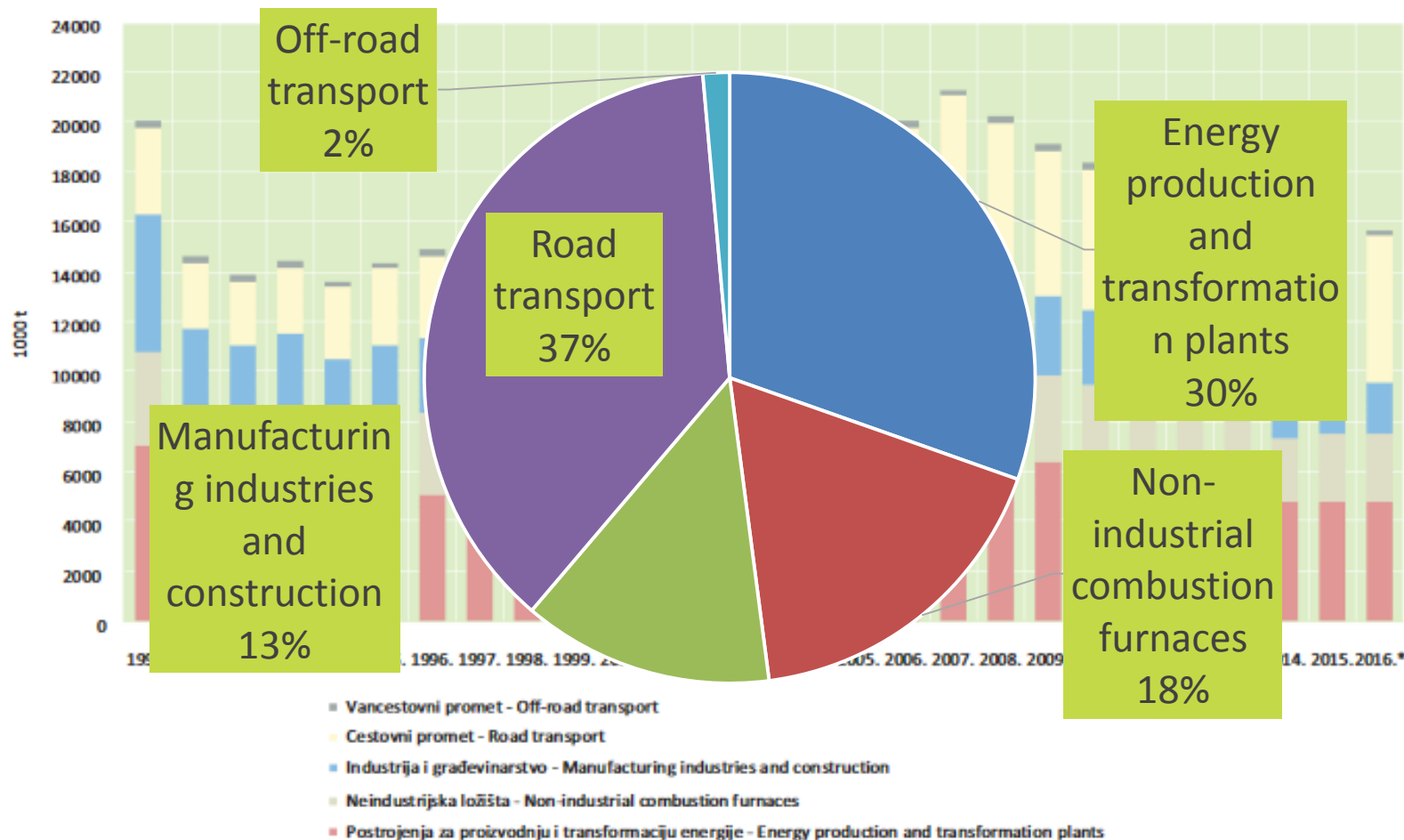
(...) energy security (...)

- Imports → 2.2 PJ of agro pruning =
  - 1% of total energy imports
  - 3% of petroleum products



1. When designing their **future renewable energy policy**, the Commission and the Member States should take into account the **circumstances and needs of rural areas**, in particular when setting up **the integrated national energy and climate plans**.

- National climate plan:  
CO2 emissions from energy sector



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- Assuming the shortest (rural development) and energy most efficient value chain for agro pruning:

solid biomass for heating

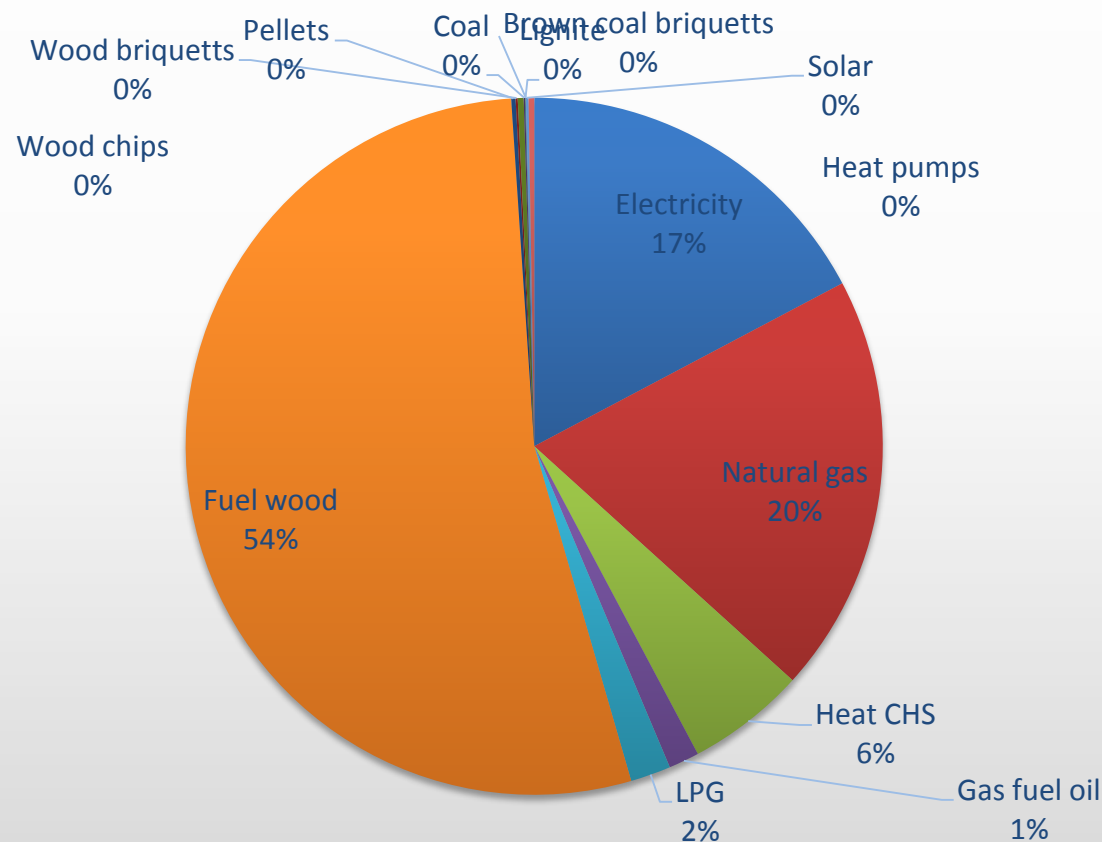
Options:

1. Household heating
2. On-farm heat for agro-produce (hot water, drying...)
3. Community heating (DH)
4. ...



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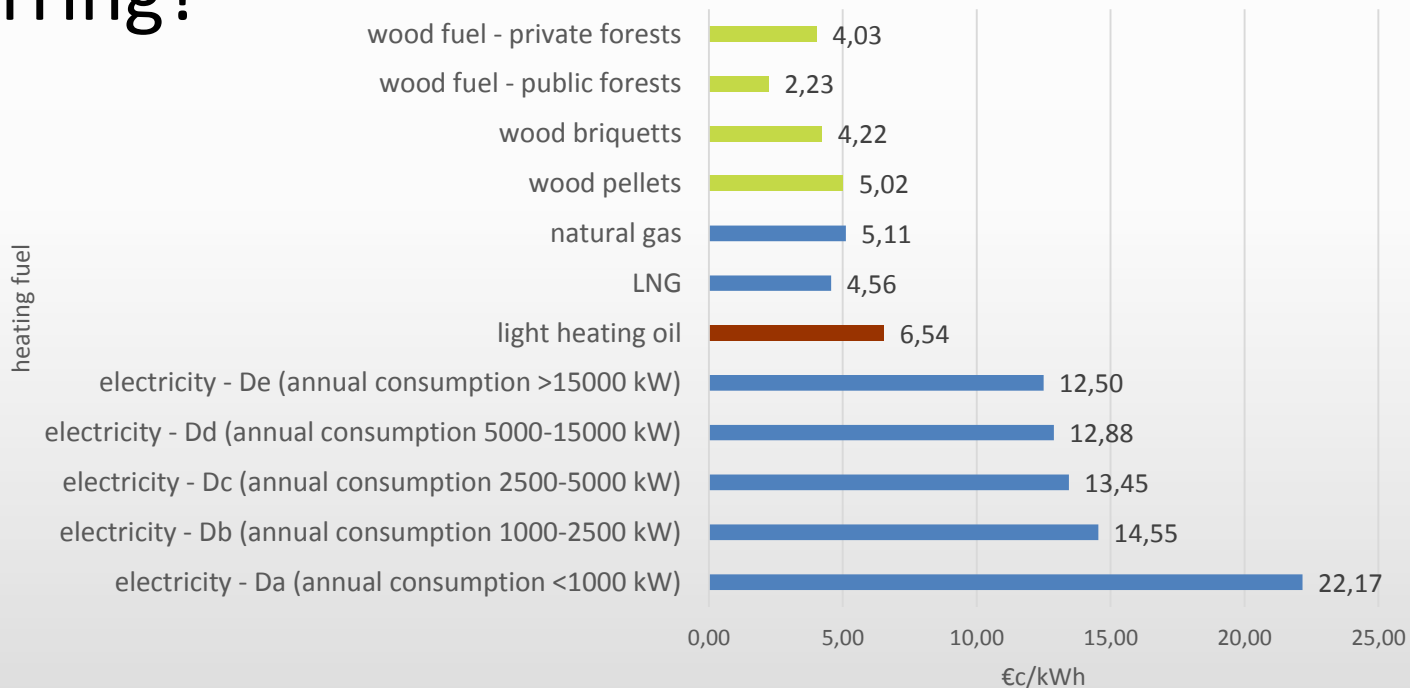
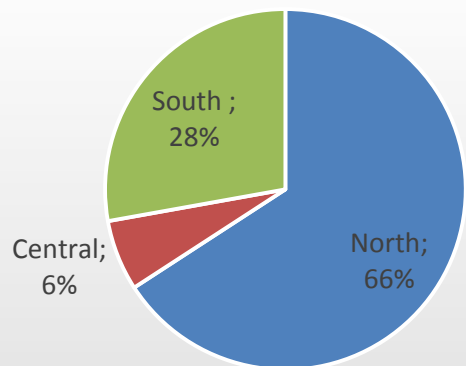
- Household heating in HR:
  - 1.43 PJ in primary energy of gas fuel oil
  - 55% of fuel for heat is of biomass origin



# 1. When designing their future renewable energy policy, the Commission and the Member States should take into account the circumstances and needs of rural areas, in particular when setting up the integrated national energy and climate plans

- Heat prices: is it competitive?
- Where is pruning occurring?

Distribution of households



### 3. The Commission should specify the **purpose and role of EAFRD support for investments in renewable energy.**

- Support household heating with agro pruning
- Make agro pruning an attractive heating fuel:
  - Allow access to adequate machinery for mobilisation of agro pruning
  - Educate Advisory services, LAGs, regional/local development agencies
  - Set programmes for changing heating systems from gas oil to agro pruning
  - Check what agro pruning as heating fuel shape is the most attractive (chips, briquettes, pellets, „logs”)
- Communicate with agro – pruning owners

### 3. The Commission should specify the **purpose and role of EAFRD support for investments in renewable energy.**

- Maximum effect from replacement of petroleum oils with 2.2 PJ/yr from agro-pruning:
  - 31.9 M€ kept within the economy
  - 7.9 M€ VAT lost
  - 39.4 M€ made disposable at the rural economy
  - 61,750 households affected in the rural area
  - 162.800 t CO<sub>2</sub> saved or 6% from the non-industrial combustion
- Demand for new 61,750 pruning burning stoves/boilers:
  - 35.5 M € investment in national capacities
  - 8.9 M€ VAT gain

5. The Commission should reinforce with the Member States the need to apply relevant selection procedures, in order **to give support only to viable RES with a clear benefit for sustainable rural development.**

- 63% of HR households are spending >10% of households' income on energy – energy poverty
- Average disposable income per household: 11.700 €/year
- A Croatian household with orchard, vineyard or olive grow would
  - **save 600 – 650 €/heating season** if replacing oil (North, Central) or electricity (South) with agro pruning
  - 100 - 130 €/month savings from heating
  - 5-6% of disposable income saved
- Fold out effects: employment along supply chain in rural area, more efficient use of existing and new resources (machinery, storage...)

Sources: DOOR Energy Poverty [https://www.interregeurope.eu/fileadmin/user\\_upload/tx\\_tevprojects/library/file\\_1502890570.pdf](https://www.interregeurope.eu/fileadmin/user_upload/tx_tevprojects/library/file_1502890570.pdf)  
DZS: INDICATORS OF POVERTY AND SOCIAL EXCLUSION, 2016 – Final Results  
[https://www.dzs.hr/Hrv\\_Eng/publication/2017/14-01-01\\_01\\_2017.htm](https://www.dzs.hr/Hrv_Eng/publication/2017/14-01-01_01_2017.htm)



4 .With regard to EAFRD support for RES, the Commission should require the Member States to **provide pertinent information on programme achievements RES projects** in their enhanced annual implementation reports of 2019.

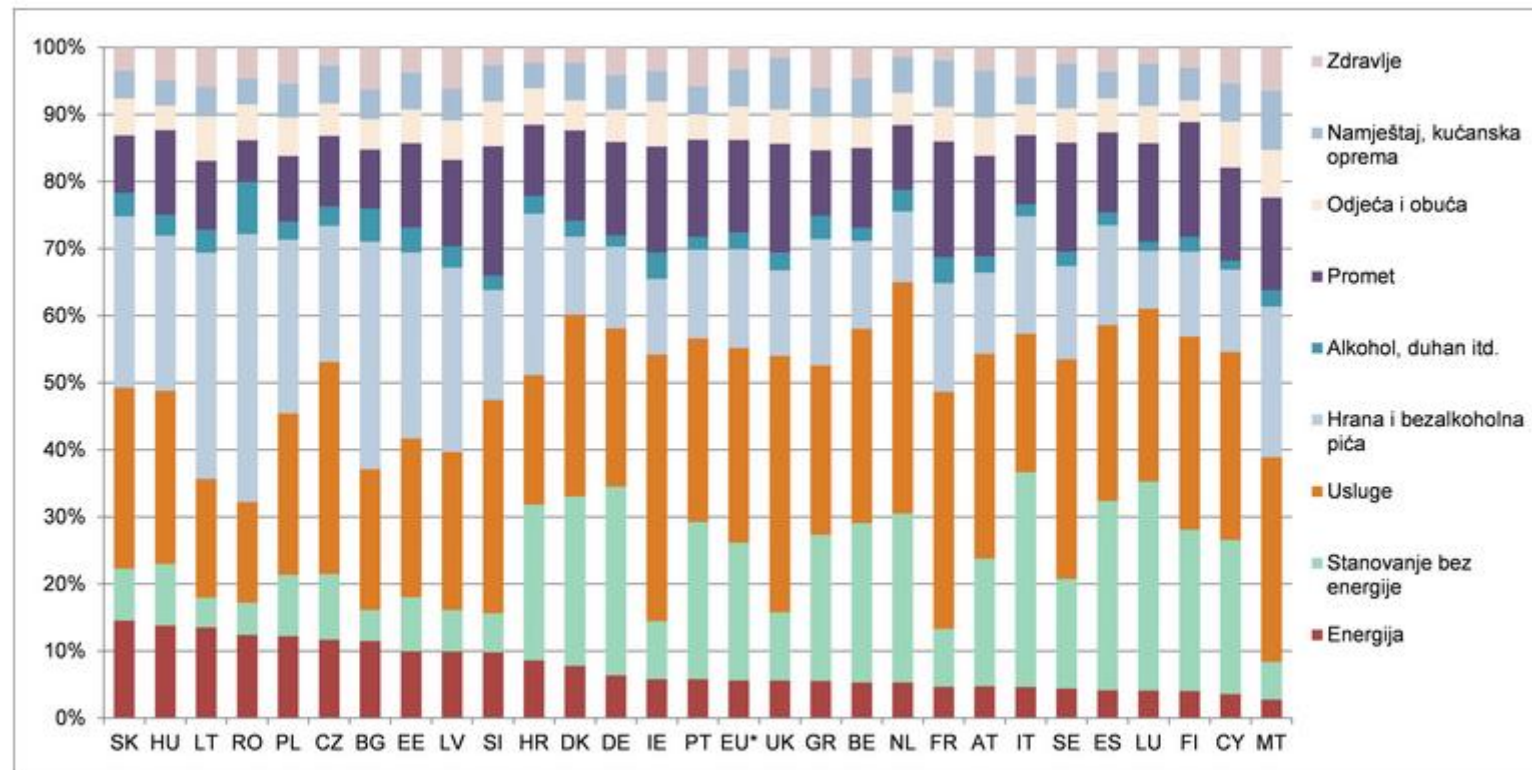
- Is there enough agro pruning to supply heat demand?
  - North and Central household:
    - average heating demand ~7-7.6 t of fresh (55% mc) prunings
    - ~4 t/yr dried to 25% mc
    - 1-3 ha orchard
    - 1.3-1.7 ha vineyard
  - South household:
    - ~ 3 t fresh (55% mc) prunings
    - ~ 1.6 t/yr dried to 25% mc
    - ~ 1 ha olive grow
    - ~ 0.5-1 ha vineyard

- What is the dynamic of conversion?  
The answer is in:

5. The Commission should reinforce with the Member States the need to apply relevant selection procedures, in order **to give support only to viable RES with a clear benefit for sustainable rural development**

# Shares of items in household expenditures

Slika 16.: Različita potrošačka roba u rashodima kućanstava (2014.)



EUROPEAN COMMISSION, Brussels, 30.11.2016; COM(2016) 769 final

REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS: Energy prices and costs in Europe {SWD(2016) 420 final}

Available at: <https://eur-lex.europa.eu/legal-content/HR/TXT/?uri=CELEX%3A52016DC0769>

In East-South Europe, **both farmers** are not aware of the possibilities within the circular economy **and policy makers are not aware** of the effect on the overall economy.

- It was „only” 0.5% of total EU potential
- It was „only” 1% of primary energy supply
- It was „only” 1% of primary energy imports
- Was it „only”?





# YOUNG FARMERS: CIRCLES OF CIRCULAR ECONOMY

## FarmCircle

January – December 2018

# Background

- Abandoned/idle agricultural land locks the bioeconomy potential that is taken for granted in studies.
- Options that EU strategy towards low carbon economy offers, new technologies and rapid scientific developments towards bioenergy & circular (bio)economy are poorly communicated to farmers in a practical way.
- Farmers are not fit to become market players in bioeconomy that creates exciting jobs in rural areas and increase competitiveness in primary (food, feed) production.

# Objective of FarmCircle project

**to make farmers aware of new trends & business opportunities in bioeconomy by producing more added value per agricultural unit.**

## WHY?

Bioeconomy creates microenterprises with high expertise jobs, social & economic opportunities atypical for rural areas. It's vital to match the farms' potentials with the suitable technology, product & ensure sustainability.

# Specific goal (the plan)

- to organise existing materials from bioenergy and bioeconomy to fit farms' features into free training material,
- train the trainers,
- inform policy makers to focus supporting schemes towards demand in accordance with farms' features.

# Expected results

- I. Establishing the connection between actual farm features and their biomass supply with expectations of bioeconomy and transition towards low carbon economy.**
- II. Tailored training material & trained advisory service officers.
- III. Employing the Bio East initiative platform and EUFRAS network (SEASN, ESEE, IALB), the PACs and SGs of EUSDR & EUSAIR, DG Energy, DG Agri, DG Env, as well as representatives of the national governments of HR, EL and AT will be informed on potential uptake of bioeconomy market - challenges and perspectives.

# Expected results

**IV. Training material available for further training and upgrading, trained agriculture stakeholders in sustainable on-farm bioeconomy, networking.**

**V. The provided studies can be used for tailoring the bioenergy policy to fit the needs of the farmers and tackle potential sustainability issues.**

**VI. Agriculture related stakeholders will be familiarized with mature and future bioeconomy technology and trends.**

**VII. Project proposals and setting up more appropriate funding schemes to create micro-enterprises to make farmers bioeconomy players.**

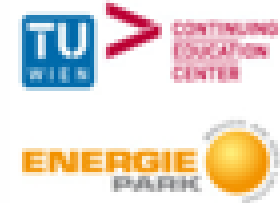
## Partners



- Energy Institute Hrvoje Požar (HR), Department for Renewable Energy Sources, Energy Efficiency and Environmental Protection – lead partner
- Mediterranean Agronomic Institute Chania (EL), Department for Sustainable Agriculture – partner
- Society for Sustainable Development Design DOOR (HR) – partner
- Landwirtschaftskammern Steiermark (AT) – partner



# Supporting partners



- [Croatian Agriculture & Forestry Advisory Service](#) (HR)
- [MS Programme Renewables Energy Systems](#): Energiepark Bruck/Leitha & TUW (AT)
- [AEBIOM](#) (BE)





# Project organisation

## Dissemination plan

**>April:**

**Prepare training material**

**May:**

**Test the training material**

**>September:**

**Improve the material**

**November:**

**Train the trainers**

**March/June**

**Working Committee meetings**

**>May**

**Profiling of farmers**

**November**

**Recommendations Studies**

# Follow us...

At the website to be made...

But until then [https://www.danube-capacitycooperation.eu/uploads/files/DSPF Kick-Off project posters 09 ECVII PA08 FarmCircle.pdf](https://www.danube-capacitycooperation.eu/uploads/files/DSPF_Kick-Off_project_posters_09_ECVII_PA08_FarmCircle.pdf)

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