



Overview of the activities for the improvement of the framework conditions for the increasing use of biomass in DHS & SMEs *(CHP based)* in B&H

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EU **BIOENERGY** pathway & local benefits

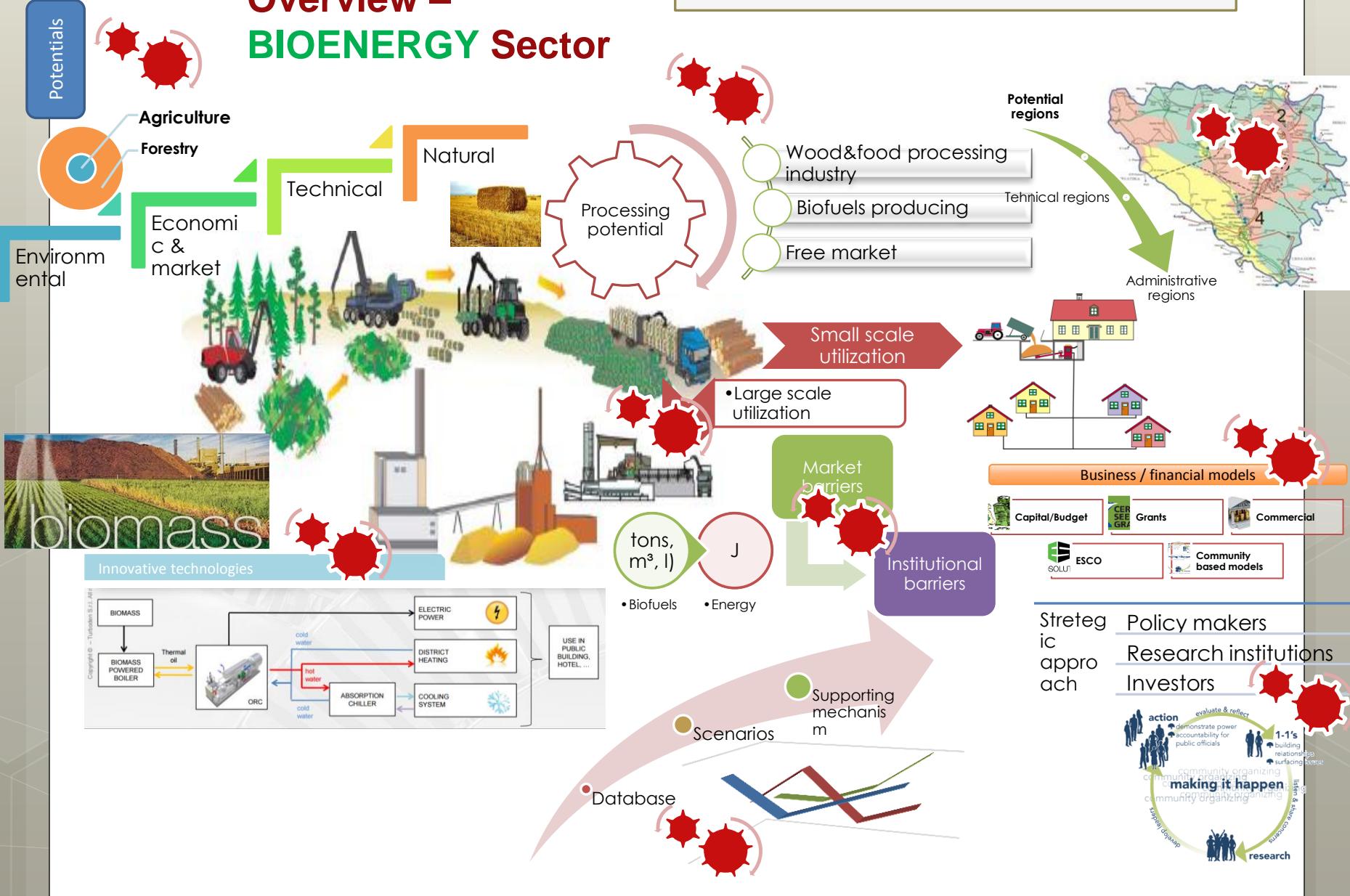


BIOENERGY - biofuels, bioliquids, biogas, biomass....

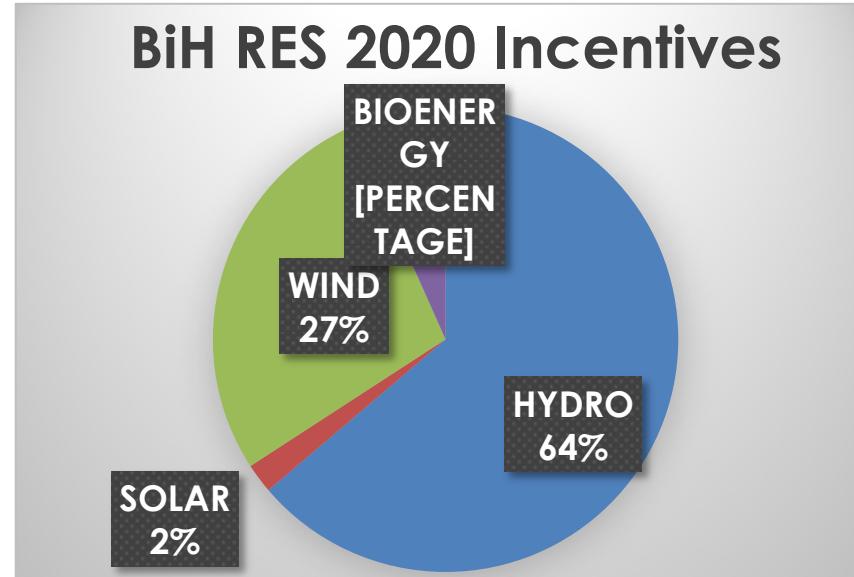


- ‘**biofuels**’ means liquid or gaseous fuel for transport produced from biomass;
- ‘**bioliquids**’ means liquid fuel for energy purposes other than for transport, including electricity and heating and cooling, produced from biomass;
- ‘**biogas**’ is a fuel gas produced from biomass (it has to be purified to natural gas quality to have access to natural gas network)
- ‘**biomass**’ means the biodegradable fraction of products, waste and residues from biological origin from agriculture (including vegetal and animal substances), forestry and related industries including fisheries and aquaculture, as well as the biodegradable fraction of industrial and municipal waste

Overview – BIOENERGY Sector



Overall RES target for BiH



Overall target for the share of energy from renewable sources in **gross final consumption of energy** in for the baseline year and 2020, for Bosnia and Herzegovina

| | |
|---|----------------------|
| Share of energy from renewable sources in gross final consumption of energy in 2009 | 34.0 % |
| Target share of energy from renewable sources in gross final energy consumption in 2020 | 40.0 % |
| Expected total adjusted energy consumption in 2020 | 4851.3 (ktoe) |
| Expected amount of energy from renewable sources corresponding to the 2020 target | 1940.5 ktoe |

DHS in BiH

- DHS in urban places
- DHS in energy utilities
- Local DHS from local factory



Heat plant



TPP/HP



Non operate



Current and planned DHS on solid biomass

 In operation

 Developing phase



PROJEKTI U BIH IZ OBLASTI BIOENERGIJE PREMA STATUSU IMPLEMENTACIJE

LEGENDA

u fazi realizacije

planiran

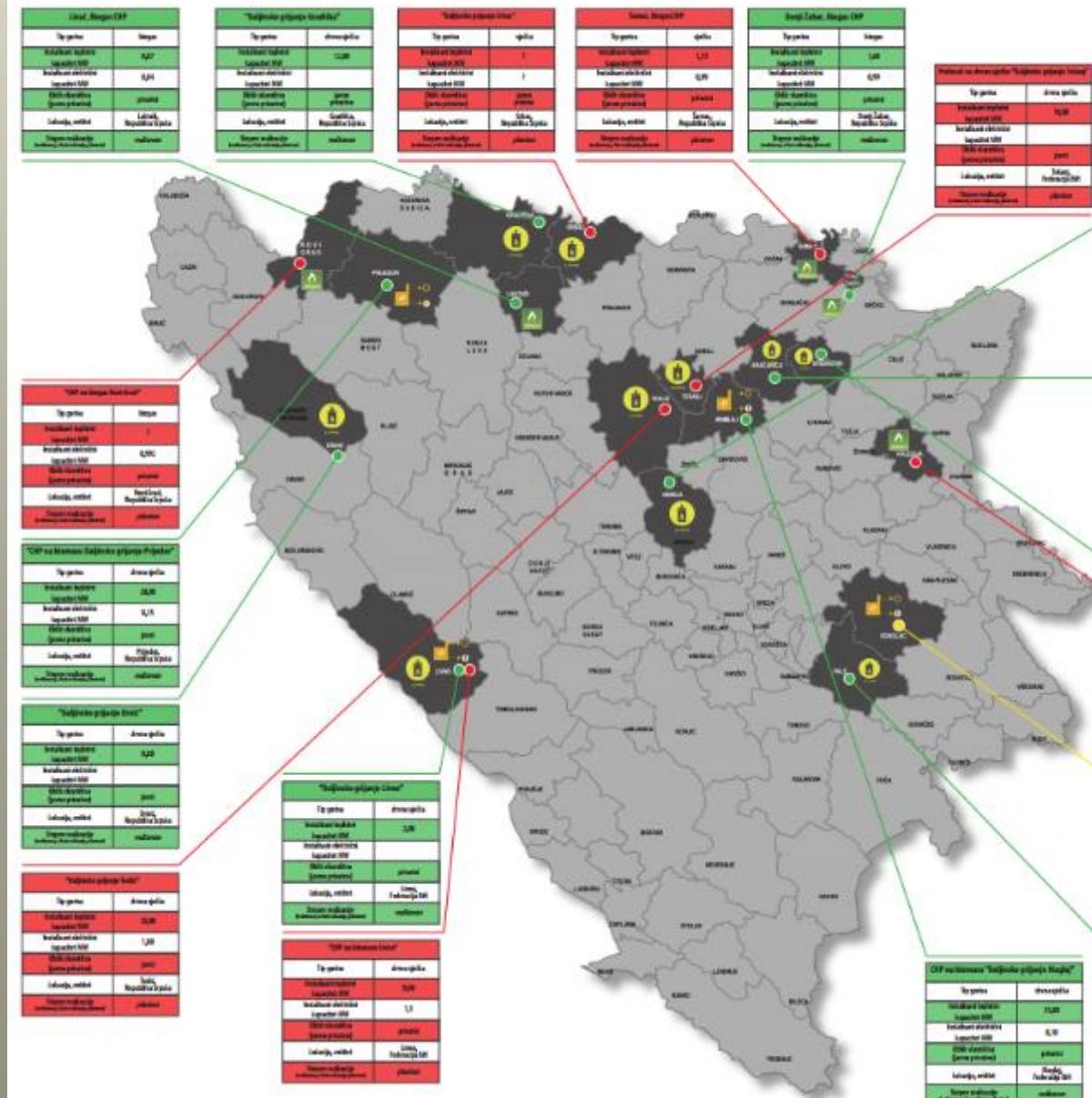
realizovan



 CHP biogas



100



Financing mechanism & supporting schemes for RES in BiH



Capital/Budget



Grants



Commercial



ESCO



Community
based models

Feed-in
tariff

*Feed in
premium*



Project Financing Opportunities in BiH

- Supporting schemes (FiT, FiP) only for electricity

| Type of power plant in accordance with type of energy source and installed capacity | Guaranteed price (excl. VAT) KM/kWh | Reference price (excl. VAT) KM/kWh |
|---|--|---------------------------------------|
| Biomass Power Plants | | |
| Micro, up to 23 kW (incl.) | 0,31292 | 0,105696 |
| Mini, over 23 kW up to 150 kW (incl.) | 0,24987 | 0,105696 |
| Small, over 150 kW up to 1 MW (incl.) | 0,24067 | 0,105696 |
| Medium, over 1 MW up to 10 MW (incl.) | 0,22706 | 0,105696 |
| Biogas Power Plants | | |
| Micro, up to 23 kW (incl.) | 0,91610 | 0,105696 |
| Mini, over 23 kW up to 150 kW (incl.) | 0,66637 | 0,105696 |
| Small, over 150 kW up to 1 MW (incl.) | 0,27891 | 0,105696 |
| Efficiency Cogeneration Plant | | |
| Medium, up to 5 MW (incl.) | 0,15419 | 0,105696 |

FBiH

Project Financing Opportunities in BiH

- Supporting schemes (FiT, FiP) only for electricity

RS

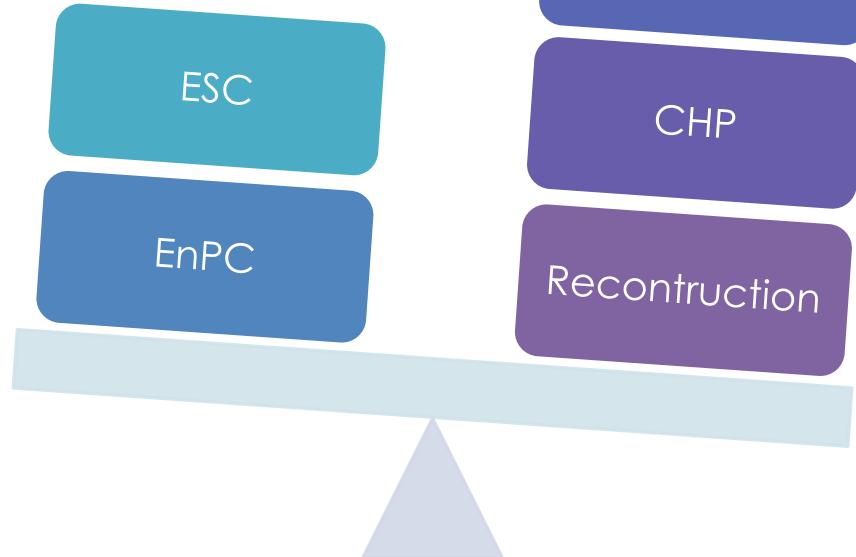
| Type of power plant in relation to the type of energy source and installed capacity | Sale through mandatory purchase at guaranteed prices (excl. VAT) | | | Sale on the market and consumption for own purposes (excl. VAT) | |
|---|--|---------------------------|---|---|-------------------|
| | Guaranteed price KM/kWh | Reference price KM/kWh | Premium (in guaranteed price) KM/kWh | Reference price KM/kWh | Premium KM/kWh |
| Biomass Power Plants | | | | | |
| Up to 1 MW incl. | 0,2413 | 0,0541 | 0,1872 | 0,0829 | 0,1584 |
| Over 1 MW up to 10 MW incl. | 0,2261 | 0,0541 | 0,1720 | 0,0829 | 0,1432 |
| Agricultural Biogas Power Plants | | | | | |
| Up to 1 MW incl. | 0,2402 | 0,0541 | 0,1861 | 0,0829 | 0,1573 |
| Conventional Energy Resources in an Efficient Cogeneration Plant | | | | | |
| New gas-fueled cogeneration plants up to 1 MW incl. | 0,2117 | 0,0541 | 0,1576 | 0,0829 | 0,1288 |
| New gas-fueled cogeneration plants From 1 MW up to 10 MW incl. | 0,1864 | 0,0541 | 0,1323 | 0,0829 | 0,1035 |
| New lignite-fueled cogeneration plants up to 1 MW incl. | 0,1197 | 0,0541 | 0,0656 | 0,0829 | 0,0368 |
| New lignite-fueled cogeneration plants over 1 MW up to 10 MW incl. | 0,0882 | 0,0541 | 0,0341 | 0,0829 | 0,0053 |
| Landfill gas in an Efficient Cogeneration Plant | | | | | |
| Up to 1 MW incl. | 0,0698 | 0,0541 | 0,0157 | 0,0829 | 0 |
| Over 1 MW up to 10 MW incl. | 0,0541 | 0,0541 | 0 | 0,0829 | 0 |

Future development

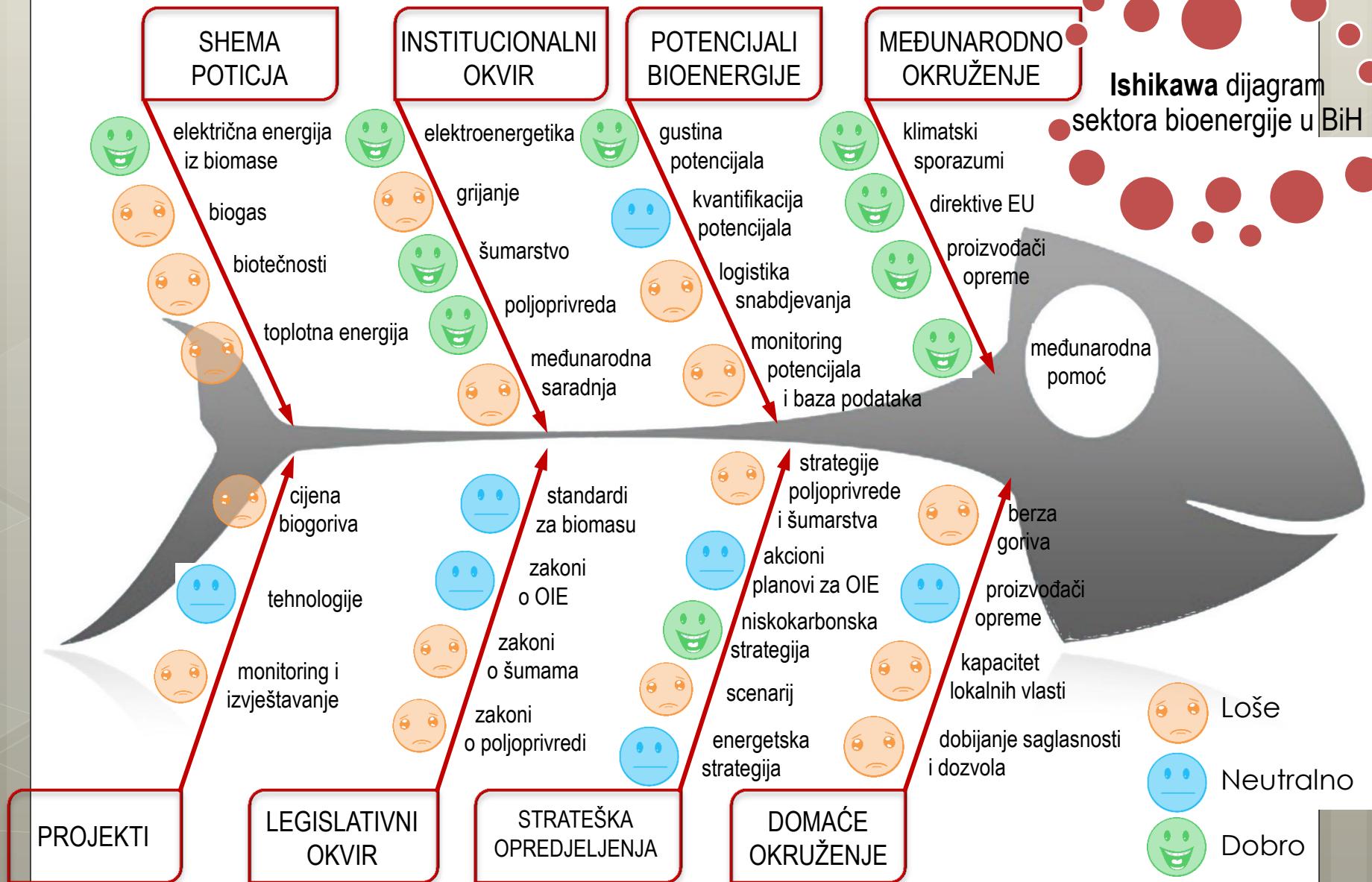
Lack of regulations
for ESCO & budget
issue!!!

ESCO
Model

PPP
Model



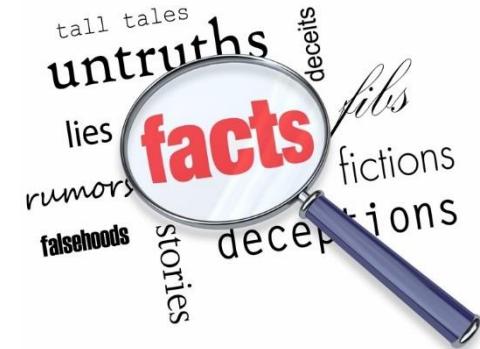
Ishikawa dijagram sektora bioenergije u BiH



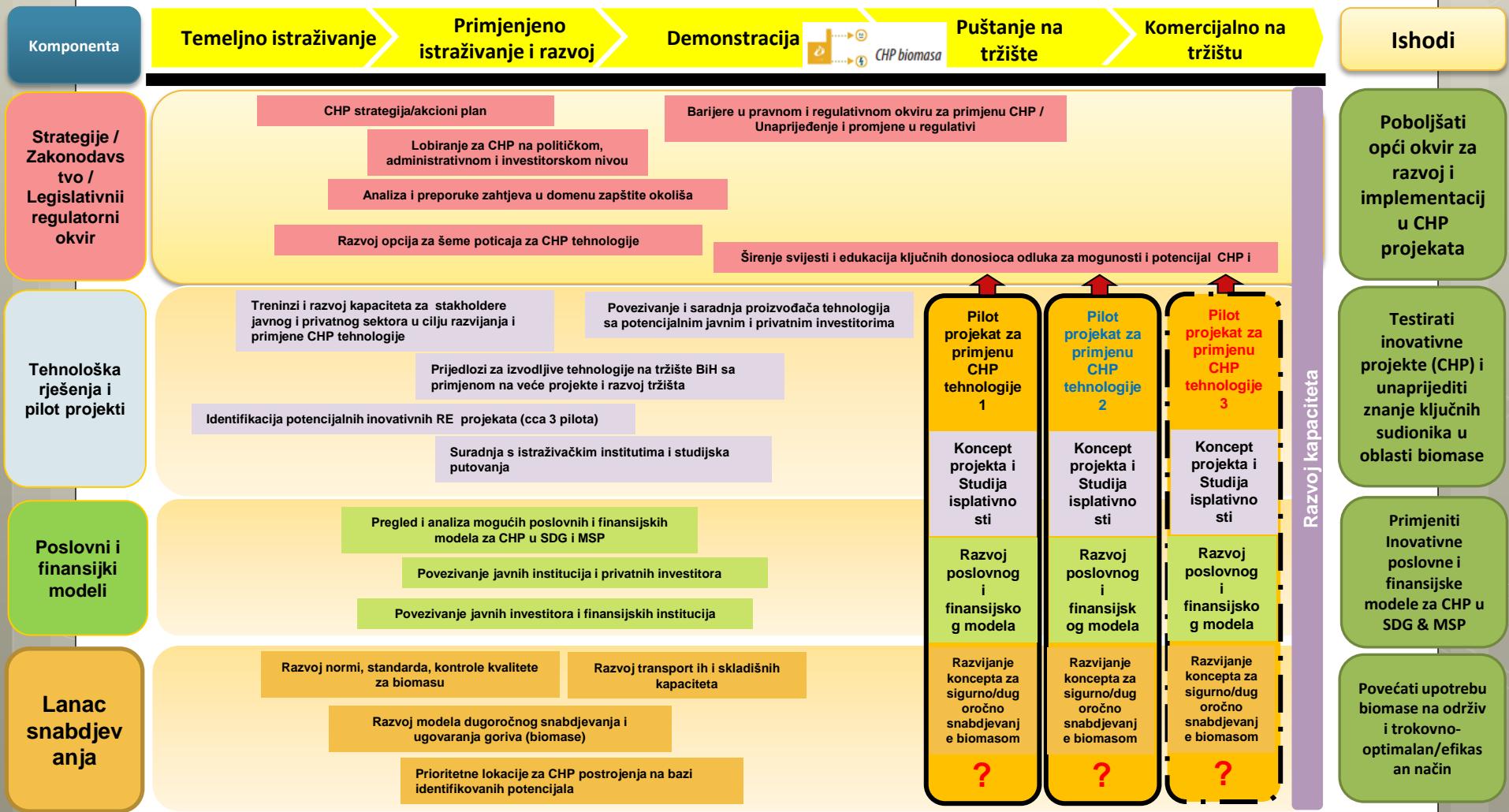
Napomena: sve kategorije su ocjenjene sa aspekta bioenergije, tako npr. zakoni o poljoprivredi su ocjenjeni sa loše jer ne tretiraju pitanja bioenergije

Facts & recommendations

- FiT insufficient for significantly RES investment
- Introduce incentives for H&C (DHS as priority)
- FiT updates & development of models for FiPs, template design for auctions
- Create a special models for supporting DHS with wider socio-economic benefits (local communities, hospitals, etc.)
- Develop existing (CHP) and introduce innovative technologies especially in biomass sector - Sustainability criteria
- Update and increase of FiT for biomass in order to attract (B)ESCO companies
- Develop available business model (PPP) and introduce new (ESCO, Community based models)
- Sector development with focus on SMEs (wood processing industry, biomass producers, forestry, agriculture, etc..)



Support to activities for biomass CHP technologies (DHS, SMEs & PB) market pull in BiH





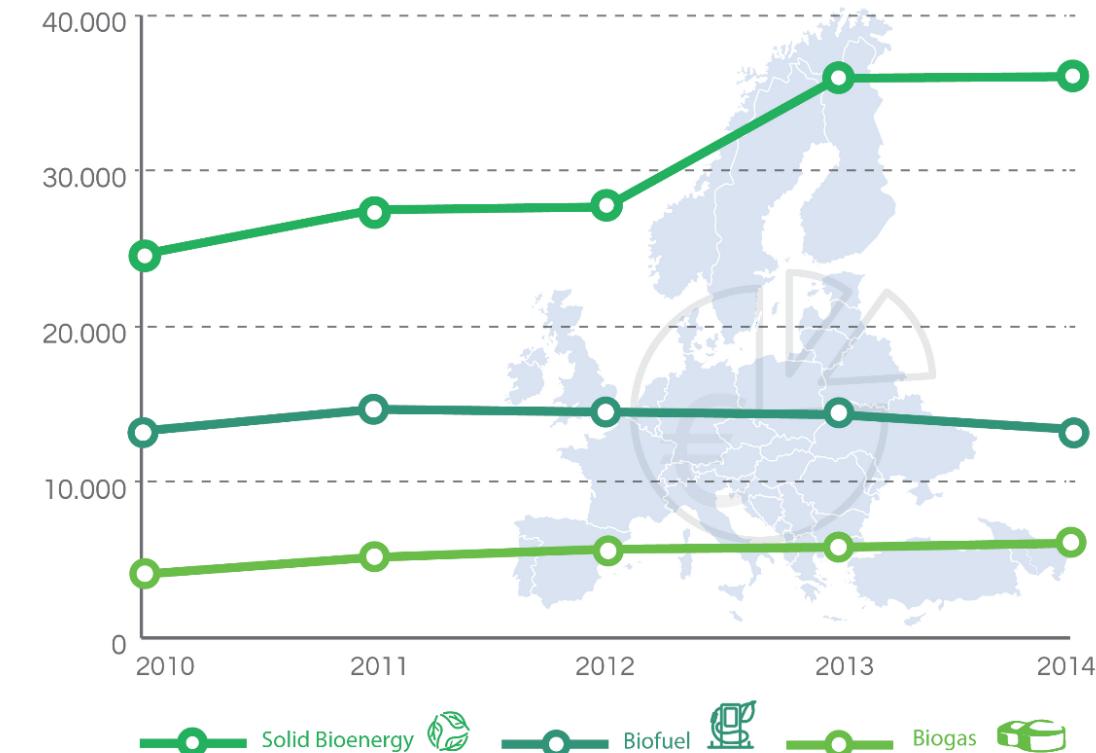
EU BIOENERGY pathway & local benefits

EU Bioenergy pathway



EU-28 evolution of the turnover within the bioenergy sector
(From 2010 to 2014, million €)

in million €



Source: Eurobserv'ER



AEBIOM
STATISTICAL
REPORT

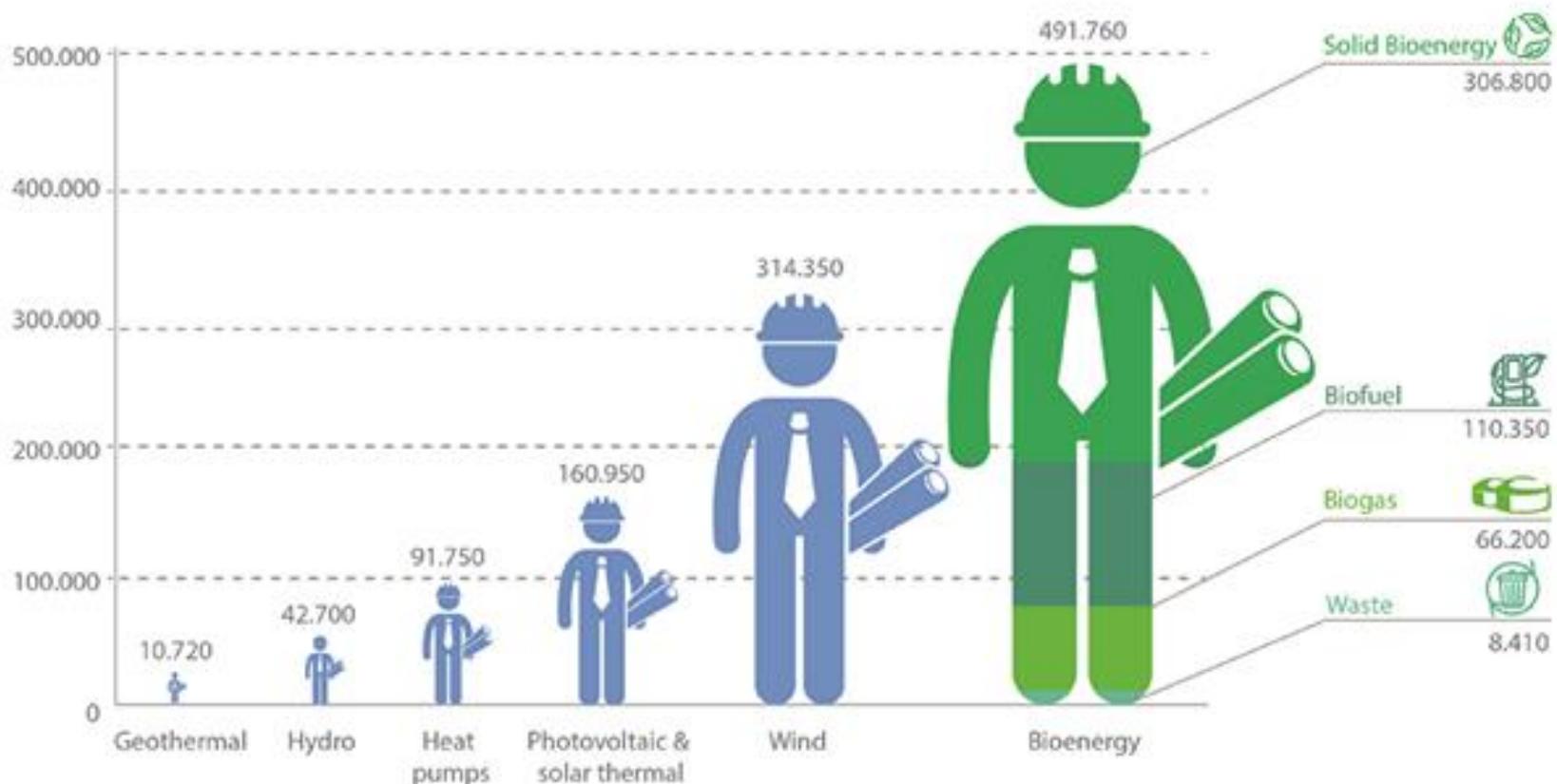
Our latest report features
exclusive figures and
visuals on European
bioenergy markets.

Learn more now:
aebiom.org/statistical-report-2016

Local benefits from RES



EU-28 employment distribution in the renewables by sector
(in 2014, direct and indirect jobs)



Source: EurObserv'ER



**THANK YOU FOR
YOUR ATTENTION!**

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