EU Danube Region Strategy (EUSDR) Launched in June 2011

Pillars and Priority Areas

- Connect the region
- Protecting the Environment
- Strengthening the Region
- Building Prosperity

Bioenergy Nexus

- Culture and tourism, People to People
- Mobility Waterways
- Mobility Rail-Road-Air
- Security
- Sustainable energy
- Environmental risks
- Biodiversity, landscapes, air and soil quality
- Water quality
- Knowledge society
- Institutional capacity and cooperation
- Competitiveness
- People and skills

Country Participation

Source: http://www.danube-region.eu/
Address the challenges and opportunities of bioenergy in the Danube Region

• Biomass mobilization: present and future role of the Danube River.
• Statistical assessment of Bioenergy status & Progress in Danube Countries
• Assessment of agricultural crop residues availability
• Local use of Biomass feedstock for biogas and bio-Heat
• Public support schemes & Funding mechanisms for bioenergy

The initiative will bring together

• National institutions (including research institutions)
• International partners (including the International Bioenergy Task 43 on Biomass feedstock for energy markets)
• EU Initiatives such as for example the JRC Enlargement/Integration/Neighbourhood Programme or Horizon 2020
Bioenergy Nexus Cluster: Priorities

• Mapping potential of the Danube Region as concerns the development of bioenergy;

• Assessment of relevant technological options;

• Assessment of the impacts of bioenergy development on agriculture;

• Assessment of the impacts of bioenergy development on climate change and vice versa;

• Assessment of the impacts of bioenergy development on soil quality;

• Assessment of the impacts of bioenergy development on biodiversity
Bioenergy Nexus: Relevance

RES Directive 29/2009

Mandatory 2020 target for EU28: 20% share of Renewable Energy Sources in Consumption

- Individual mandatory targets for the Member States
- Fixed trajectory
- "Burden share" possible
- Biofuels for transport

Sustainability Certification
Land Use Change Assessment
GHG accounting
Other Renewables

National Renewable Energy Action Plans
Bi-annual progress reports
Bioenergy deployment in the Danube Region

(2010 – 2020)

9 EU Member States
AT, BG, HR, CZ, DE, HU, RO, SK and SI

7 non-EU countries
UA, MD, RS, BiH, AL, ME and the Former Yugoslavian Republic of Macedonia

Sectors
- Heating/Cooling
- Electricity
- Transport

Biomass supply
- Forest
- Agriculture
- Waste

http://iet.jrc.ec.europa.eu/remea/
National RES share in Gross Final Energy Consumption in EU-DC's

EU 28 RES share target for 2020

Source: EU-DC's bi-annual progress reports and NREAPs
Renewables in EU-DC's

In 2012 total RES in EU-DC's: 2059 PJ or 31% of EU 28 total RES
14 GJ/capita

DE – 54% of total RES in EU-DC's
AT – 43.4 GJ/capita

Source: EU-DC's bi-annual progress reports and NREAPs
In 2012:

14 tCO₂/capita GHG emission savings
243 Mt CO₂ eq GHG emission savings
or 38% of GHG emission savings in EU 28

65% - electricity sector
31.5% - heating/cooling sector
3.5% - transport sector

DE – 60% of total GHG emission savings in EU-DC's
AT – 3.5 tCO₂ eq GHG emission savings per capita

Source: EU-DC's bi-annual progress reports
In 2012 bioenergy covered 64.6% of total RES in EU Danube Countries

Total bioenergy in EU-DC's: 1317 PJ (31452 ktoe), ~ 9 GJ/capita

Decreased by 1.4% between 2010 and 2012

DE – contribute with 52% in total EU-DC's bioenergy
AT – 24.4 GJ/capita

Source: EU-DC's bi-annual progress reports
2012 bioenergy EU-DC's deviation from NREAP

- CZ used less bioenergy comparing to NREAP
- Except AT all EU-DC's used less biofuels comparing to NREAP

Source: EU-DC's bi-annual progress reports and NREAPs
In 2012

- **Bioheat:** 963.5 PJ or 73.2% of total bioenergy in EU-DC's
  Decrease by 3.0% in 2010-2012

- **Bioelectricity:** 182.9 PJ or 13.9% of total bioenergy in EU-DC's
  Increased by 7.9% in 2010-2012

- **Biofuels:** 170.5 PJ or 12.9% of total bioenergy in EU-DC's
  Decreased by 0.7% in 2010-2012

Source: EU-DC's bi-annual progress reports
In 2012:

Biomass – 1146.4 PJ or 87% of total bioenergy in EU-DC's

**Solid biomass:** 976 PJ
- 85% of total biomass use in EU-DC's
- 74% of total bioenergy in EU-DC's
- decreased by 3.8% in 2010-2012

**Biogas:** 162.4 PJ
- 14.2% of total biomass use in EU-DC's
- 12.3% of total bioenergy in EU-DC's
- increased by 32.2% in 2010-2012

**Bioliquids:** 8 PJ
- 0.8% of total biomass use in EU-DC's
- 0.6% of total bioenergy in EU-DC's
- decreased by 80.8% in 2010-2012

Source: EU-DC's bi-annual progress reports
Total biomass supply (E + H/C + Tr) - 1403 PJ
94.4% domestic (1324 PJ)
96.5% used for E + H/C (1355 PJ)
DE – 56% of total biomass supply in EU-DC's

Source: EU-DC's bi-annual progress reports and NREAPs
Domestic biomass supply in EU-DC's

22% increase between 2010 and 2012

- Forestry: 18.3% increase 2010-2012
- Agriculture: 5.2% increase 2010-2012
- Waste: 55.2% increase 2010-2012

Source: EU-DC's bi-annual progress reports
Other includes: energy crops, common arable crops for biofuels
In 2020 bioenergy is expected to amount to **1661 PJ** or **58%** of total RES in EU-DC's

The expected growth: **344 PJ**

DE – **53%** in contribution to ED-DC's bioenergy

Source: EU-DC's NREAPs
**Expected growth of bioenergy in EU-DC's (2012-2020)**

**In 2020:**
- **Bioheat:** 63.4% of total bioenergy in EU-DC's
  - Expected growth: +9.4% (+90 PJ)
- **Bioelectricity:** 15.0% of total bioenergy in EU-DC's
  - Expected growth: +36.4% (+66.5 PJ)
- **Biofuels:** 21.6% of total bioenergy in EU-DC's
  - Expected growth: +110% (+187.4 PJ)

Source: EU-DC's bi-annual progress reports and NREAPs
In 2020: biomass 1313 PJ or 78.4% of total bioenergy

Solid biomass: 1079.3 PJ or 82.2% of total biomass
Expected growth: +10.6% (+103.4 PJ)

Biogas: 197.4 PJ or 15% of total biomass
Expected growth: +21.5% (+35 PJ)

Bioliquids: 36.75 PJ or 2.8% of total biomass
Expected growth: +358% (+28.7 PJ)
In 2020: Domestic biomass: 1789 PJ

Forestry: 980 PJ or 54.8%
Agriculture: 680 PJ or 38.0%
Waste: 129 PJ or 7.2%
Expected growth of domestic biomass supply in EU-DC's (2012-2020)

Total domestic biomass: +475 PJ (+36%)

Forestry: +55 PJ (+5.9%)

Agriculture: +416 PJ (+152.4%)

Waste: +62.4 PJ (92.2%)

Source: EU-DC's bi-annual progress reports and NREAPs
National RES share in Gross Final Energy Consumption in non EU-DC's

2009 and targets for 2020

Source: Energy Community
Up to now only MD and RS have submitted the NREAPs
Ukraine

In 2020, it is expected that 53.8 % (4 592 ktoe) of the total renewable energy will be bioenergy;

Moldova

In 2020, it is expected that bioenergy will amount to 375.2 ktoe or 86.8% of total renewable energy;

Serbia

In 2020 Serbia will use 1478.3 ktoe bioenergy or 57.7% of total renewable energy;
**Expected bioenergy in non EU-DC's**

**The Former Yugoslav Republic of Macedonia**

In 2020 will use 288 ktoe bioenergy or 55.8% of total renewable energy;

**Albania**

In 2020, biomass in the electricity sector is expected to generate 16 ktoe equal to 2.1% of total renewable electricity expected to be produced. Transport sector is expected to use in 2020 105.4 ktoe of bioenergy.
Challenges....

We need common data for ALL Danube Region Countries
We need regional data on bioenergy for ALL Danube Region Countries
We need economic data on:

Energy Prices
  Fuel
  Electricity
  Heating Energy (Coal, Oil, Wood ...)

Agricultural data:
  Products, Yields
  Water Consumption
  Economic Value
  Environmental Constraints
About the Danube Bioenergy Information Tool

The Danube Bioenergy Information Tool (DBIT) presents the development of bioenergy in Danube Region based on National Renewable Energy Action Plane, bi-annual progress reports, information from Danube countries institutions (including research institutions), international partners and other EU organizations and initiatives.

Danube Bioenergy Information Tool

Welcome to the Danube Bioenergy Information Tool. To view the data sorted by country simply click on the markers.

Thank you on your attention!