

How to make bioenergy successful through national and regional energy policy

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Europe



Norway

Oslo



4.8 M

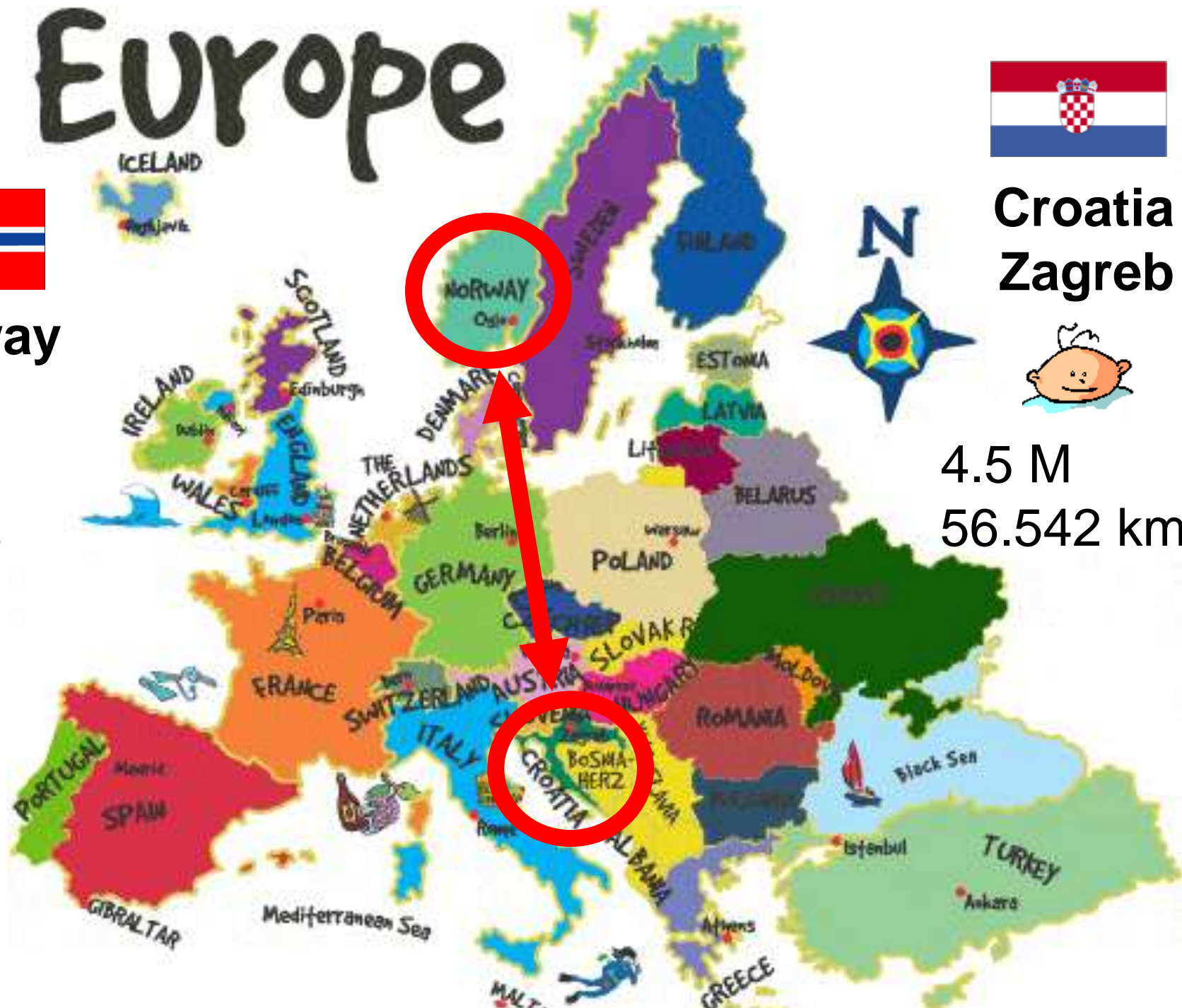


Croatia
Zagreb



4.5 M

56.542 km



Introducing the main actors...

- NW Croatia Regional Energy Agency
- Four founding authorities



- TV Energy - SE England

Area: 8500 km²

Population: 1.3 million

4 counties, 21 towns, 68 municipalities



Bioenergy in Croatia

- High potential –forestry, wood industry, agriculture
- Total technical potential app. 39 PJ
- Existing and planned projects – CHP and DH plants, biofuels (biodiesel), pellets, charcoal
- Rapid market developing
- Intensive international cooperation (bilateral, EU,...)



Forest Biomass

Source	Energy potential in m ³ /year
Forests	2,6 mil.
Wood processing industry	1,7 mil.
Total forest biomass	4,3 mil.

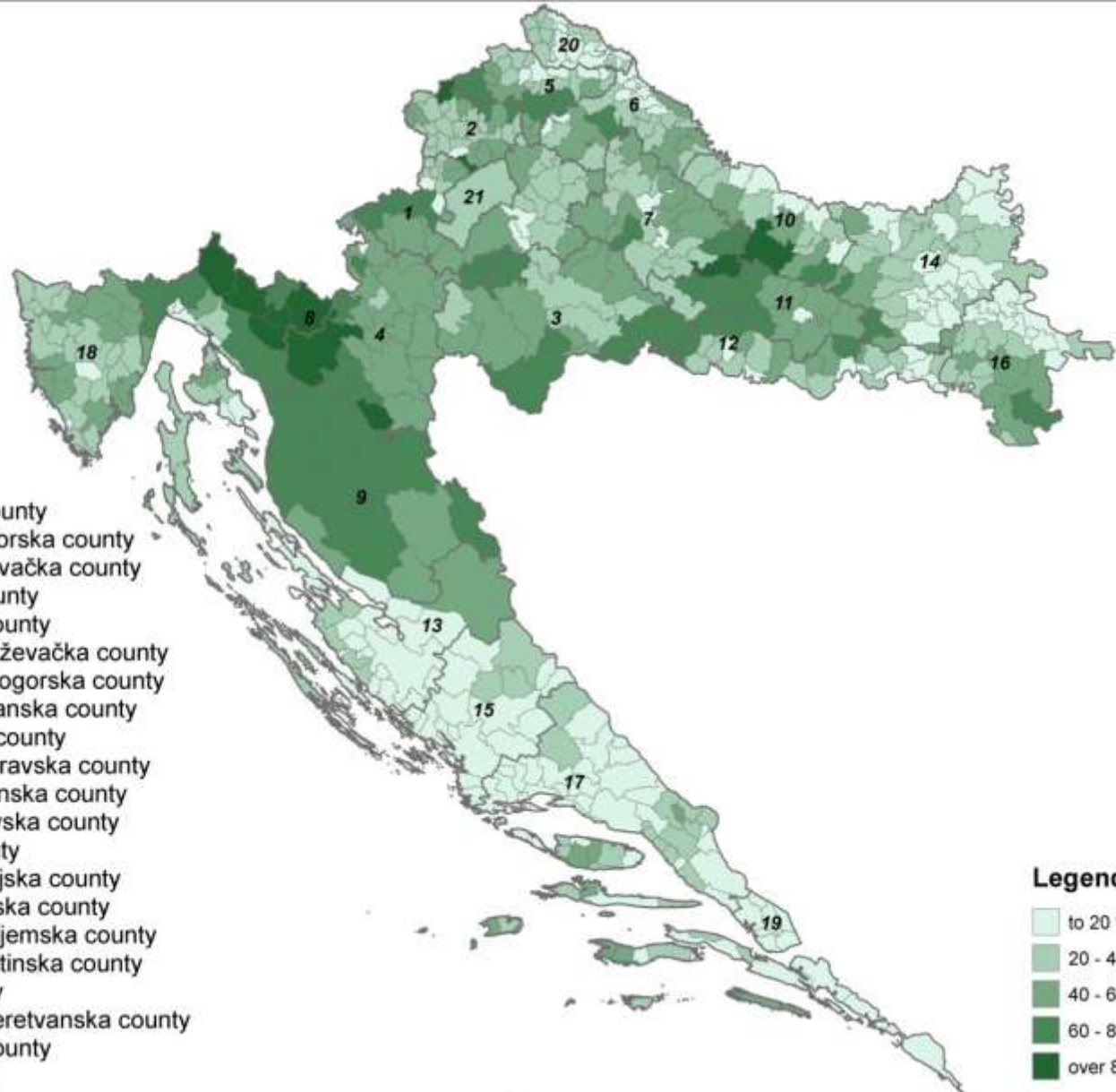


Forest Biomass

Source	Area / %
Forests and forest land managed by Croatian Forests Ltd.	2.018.987 ha / 75%
Forests and forest land managed and owned by Croatian Forests Ltd.	87.930 ha / 3%
Private forests	581.770 ha / 22%

Biomass	m ³
Wood stock	398.000.000
Annual increment	10.500.000
Annual felling	6.560.000





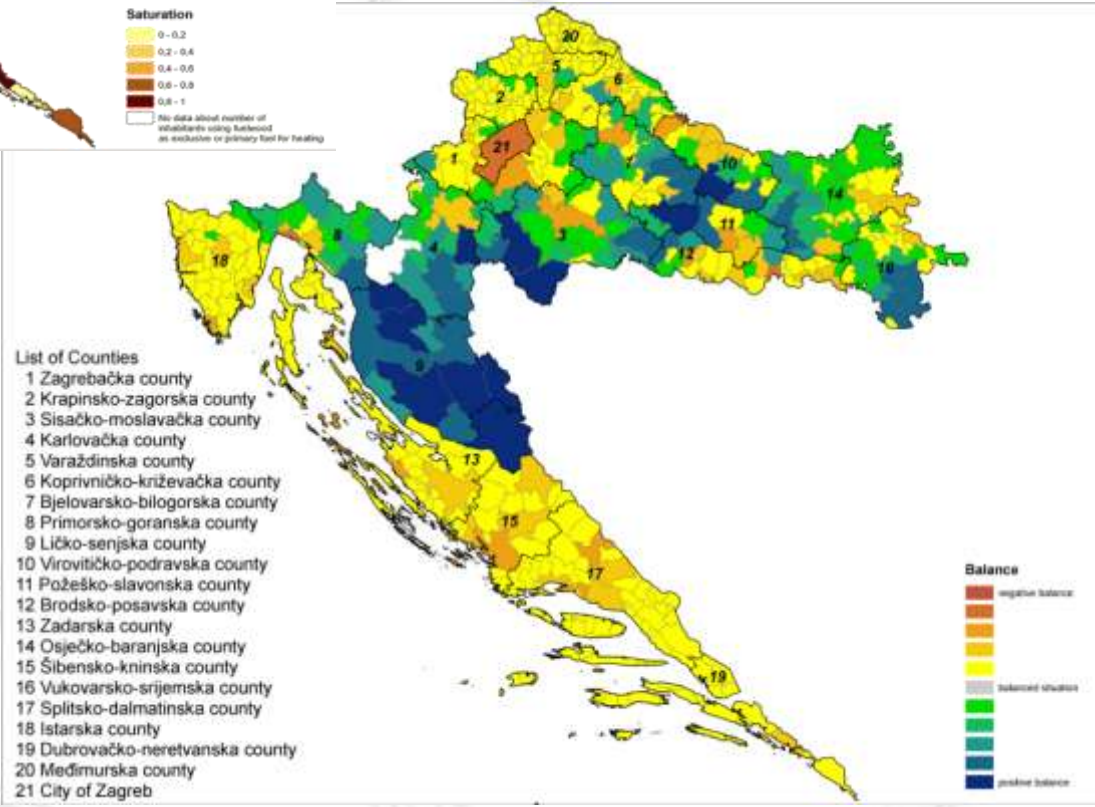
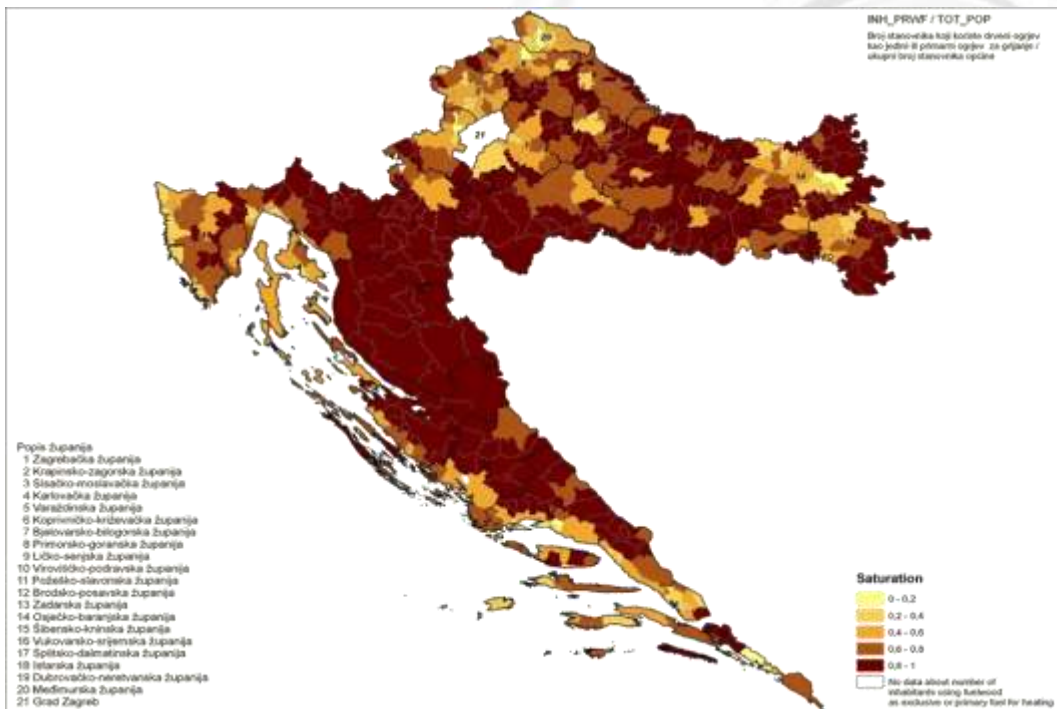
List of Counties

- 1 Zagrebačka county
- 2 Krapinsko-zagorska county
- 3 Sisačko-moslavačka county
- 4 Karlovačka county
- 5 Varaždinska county
- 6 Koprivničko-križevačka county
- 7 Bjelovarsko-bilogorska county
- 8 Primorsko-goranska county
- 9 Ličko-senjska county
- 10 Virovitičko-podravska county
- 11 Požeško-slavonska county
- 12 Brodsko-posavska county
- 13 Zadarska county
- 14 Osječko-baranjska county
- 15 Šibensko-kninska county
- 16 Vukovarsko-srijemska county
- 17 Splitsko-dalmatinska county
- 18 Istarska county
- 19 Dubrovačko-neretvanska county
- 20 Međimurska county
- 21 City of Zagreb

Legend

- to 20 %
- 20 - 40 %
- 40 - 60 %
- 60 - 80 %
- over 80 %





Who can do what?

- National (Government/Ministries, Funding)
 - Legal framework
 - Incentives (Feed-in, grants, loans,...)
 - Awareness raising
- Regional (20 Counties/ 3 Regions)
 - Incentives, Awareness raising
- Local (cities, municipalities, industry)
 - Initiative/projects/implementation



National Policy Framework for Bioenergy in Croatia

- National forest policy and strategy (2003)
- Development Strategy of Industrial Wood and Paper Processing (2004)
- Energy Strategy (2004, 2009)
- Forestry Law (2008)
- Energy Law (2004)
 - RES Electricity sublaws (2007)
 - RES Heat sublaws (2010?)



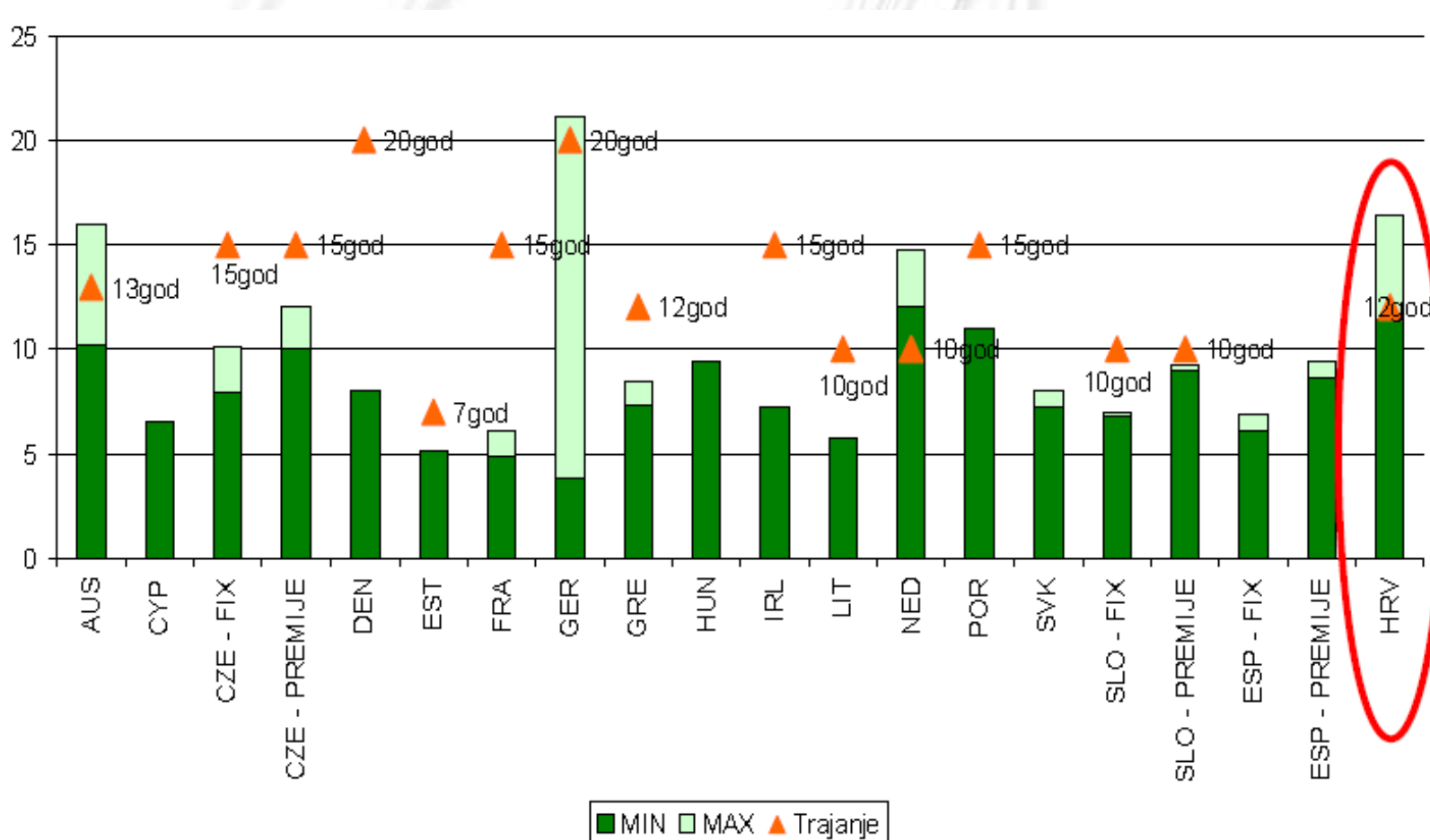
Policy framework for wood energy

Tariff system for RES electricity (€/kWh)

	<1 MW	>1 MW
Small hydro	9,2	5,6 – 9,2
Wind	8,53	8,66
Biomass, forestry and agro	16,0	13,9
Biomass, ind. wood residues	12,7	11,4
Geothermal	16,8	16,8
Biofuels	4,8	4,8
Biogas	16,0	13,9
Landfill gas	4,8	4,8
Wave, tidal	8,0	6,7
Solar pv, <10 kW	45,3	-
Solar pv, 10-30 kW	40,0	-
Solar pv, >30 kW	28,1	-



Tariff system for RES electricity (€/kWh)



Environment Protection and Energy Efficiency Fund

- National extra-budgetary fund to finance RES and RUE projects
- Established in 2003 by Law
- Revenues (160 mil. EUR in 2009):
 - Charges for CO₂, SO₂ and NO₂ emissions
 - Waste charges
 - Environment charge on motor vehicles
- Grants, *soft* loans, interest rate subsidies



Lessons learned

- Bioenergy as a complex subject
- Communication (cooperation) between different ministries crucial
- Different drivers should not mean different policy!
- Clear identification of national interest/goal
- Importance of financial incentives (feed-in for bioelectricity, capital grants for bioheat)



Regional Policy

- Regional strategies based on actual projects (more realistic!)
- Awareness raising
- Focused supporting schemes and promotional campaigns
- Education and trainings



I JA MOGU IMATI SOLARNE KOLEKTORE !!!

Krapinsko-zagorska županija
objavljuje javni natječaj za
podnošenje prijava fizičkih
osoba za sufinansiranje ugradnje
sustava za korištenje obnovljivih
izvora energije.

Sufinanciraju se troškovi opreme i ugradnje:
1. Solarni kolektorski sustav - 30 sustava;
2. Geotermalna dizalica topline - 5 sustava;
3. Kotlovskih sustav na pelete - 5 sustava,
u iznosu od 40%
(do maksimalno 12 000 kn
po kućanstvu).

Rok za podnošenje prijave je
15. srpnja 2010.

Više informacije na www.zgpa.hr natječaj: **SM2010/01**
na promotivnom letku u svim građanskim i općinskim ureduima.

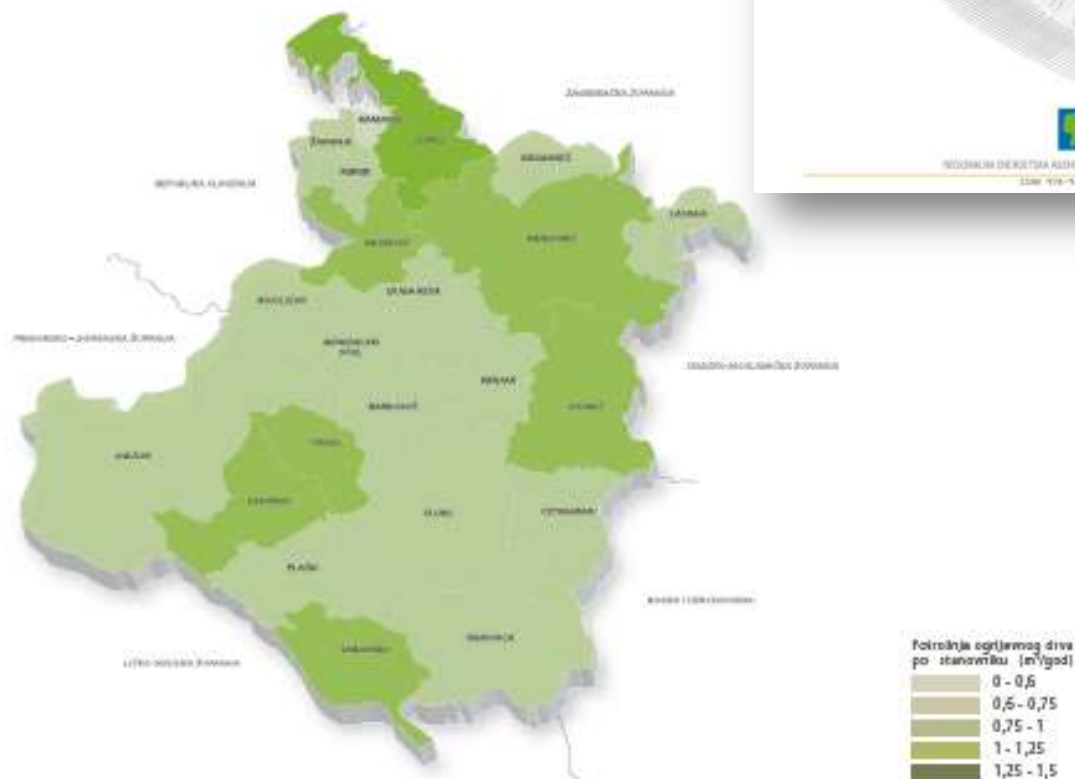


2.3. Dosadašnja iskustva i provedeni projekti korištenja obnovljivih izvora energije

2.3.1. Energija biomase

Na području Karlovačke županije biomasa kao energent ima značajnu ulogu u obliku ogrjevnog drva za grijanje te ostataka za proizvodnju toplinske energije u brojnim drvo-prerađivačkim tvrtkama.

Prema podacima Državnog zavoda za statistiku iz Popisa stanovništva 2001. godine, broj nastanjenih kućanstava primarni energent za grijanje na području Karlovačke županije iznosi 34 754, dok broj stanovnika koji koristi drvo iznosi oko 103 585 (73,1% od ukupnog broja stanovnika). Ukupna površina nastanjenih kućanstava koja koriste grijanje iznosi oko 2,38 milijuna m², što odgovara procijenjenoj godišnjoj potrošnji od oko 121 365 m³ ogrjevnog drva. Prosječna procijenjena godišnja potrošnja ogrjevnog drva po stanovniku za Karlovačku županiju iznosi 0,95 m³, a iznosi 0,77 m³. Na osnovu procjene ukupne potrošnje ogrjevnog drva moguće je izračunati i raspodjelu godišnje potrošnje. Potrebno je ipak napomenuti da se sve navedene vrijednosti odnose na 2001. godinu te bi za prikupljanje novijih podataka potrebno bilo anketiranje kućanstava na području županije.



Slika 2.3. Godišnje potrošnje ogrjevnog drva po stanovniku za Karlovačku županiju



Lessons learned

- ‘Waiting on signal from Zagreb’ syndrome
- Active role makes a difference
- Energy agency as a critical factor (expert knowledge + implementation)
- Significant funding opportunities
- Key point for *heat entrepreneur* model



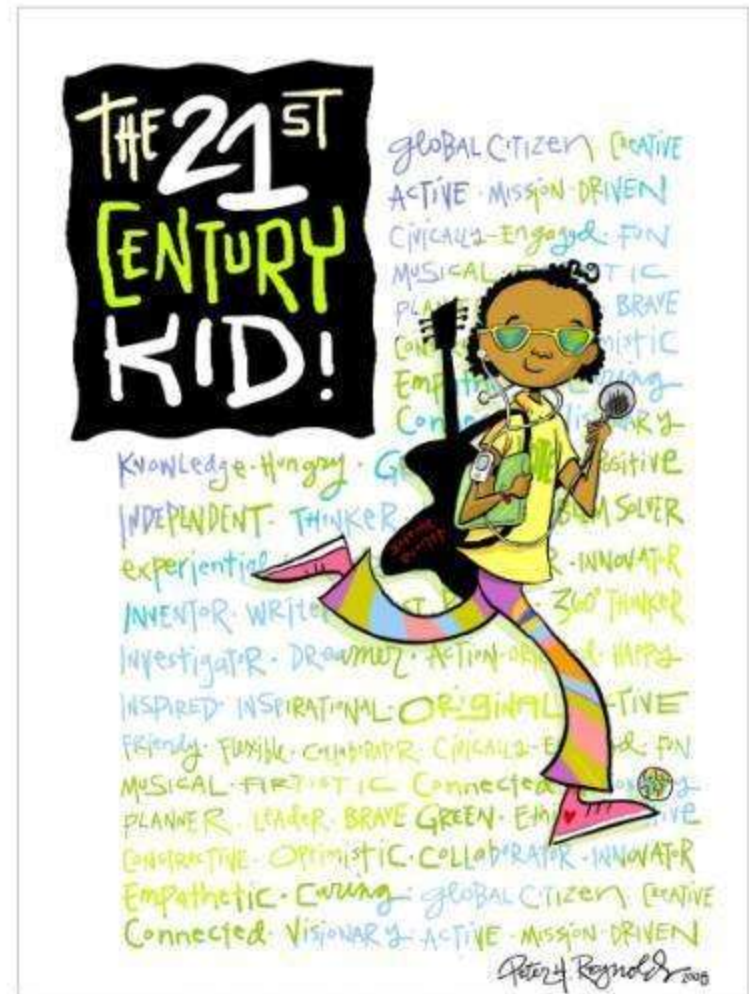
Local Energy Action in Croatia

- Local/regional energy action traditionally not an issue in Croatia
- Energy sector – top-down thinking only, centralised planning and decision making
- Local communities usually not aware of possibilities, not interested to get involved or simply do not know what (how) to do (it)



Winds of change

- Motivation:
 - Energy prices
 - Pollution concern
 - Croatian EU accession (examples!)
- The recipe:
 - Public support
 - Expert work
 - Policy/Financial





Covenant of Mayors

Committed to urban
sustainable energy



Ongoing Biomass DH Projects



- 1995 – Ogulin (1 MW)
- 2005 – Gospić (1 MW)
- Zakanje (500 kW, pellets)
- Pokupsko (1 MW, chips)
- Ozalj (3 MW)
- Slunj (4 MW)
- Duga Resa, Rakovica, Krasic
- Heat entrepreneurs!



Project example: Pokupsko

- Rural municipality 50 km South-east from Zagreb
- Heating plant (1 MW) + DH network
- Fuel storage + logistics
- Local supply (wood industry, private forests)
- Partnership: 'Local champion' supported by the energy agency

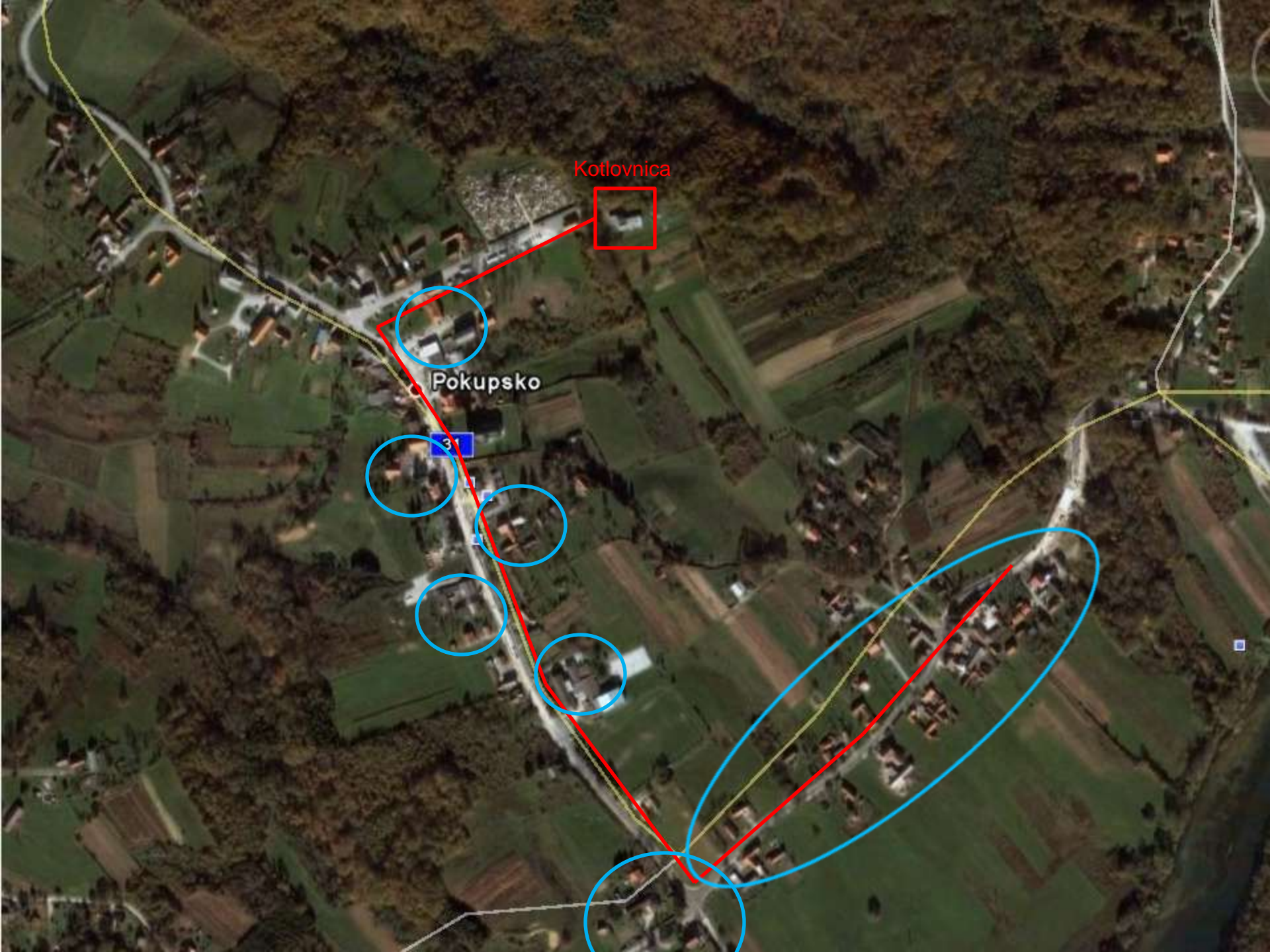


Pokupsko



energy" – Dubrovnik 17 - 20 November
2009





Kotlovnica


Pokupsko

31

Lessons learned

- Only realistic projects can succeed
- Careful planning and expert work
- Documentation. Documentation. Documentation.
- Crucial role of 'local champions'
- Importance of local pride or 'Being the first'
- Public consultation and study tours (*see it, smell it, touch it and talk to your colleague*)!






Biomass? Biomass heating plant?

I don't like this...

Are we really going to be the first one?



Nice... And if it works here... (we can do only better...)



If this will not convince them...

THIS IS IT!!!

Conclusions

- Significant energy potential
- Existing experience and technical knowledge
- Promising area for international cooperation
- Good funding opportunities (national, EU, others)
- Can we do something together?

