

Policies and Barriers for DHC outside EU Countries

Funded by IEA DHC Annex IX

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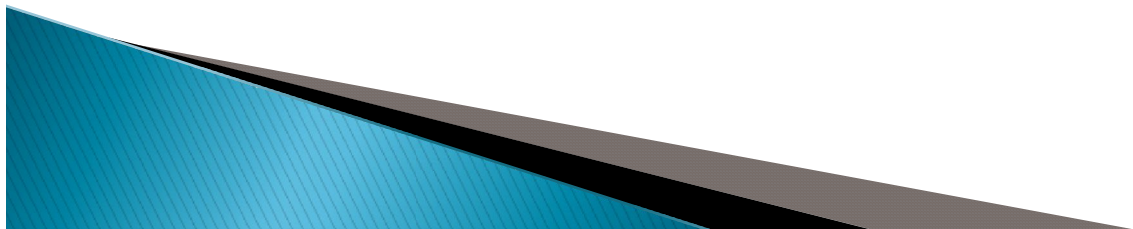
Tallinn, March 16, 2011

Energy-an Consulting

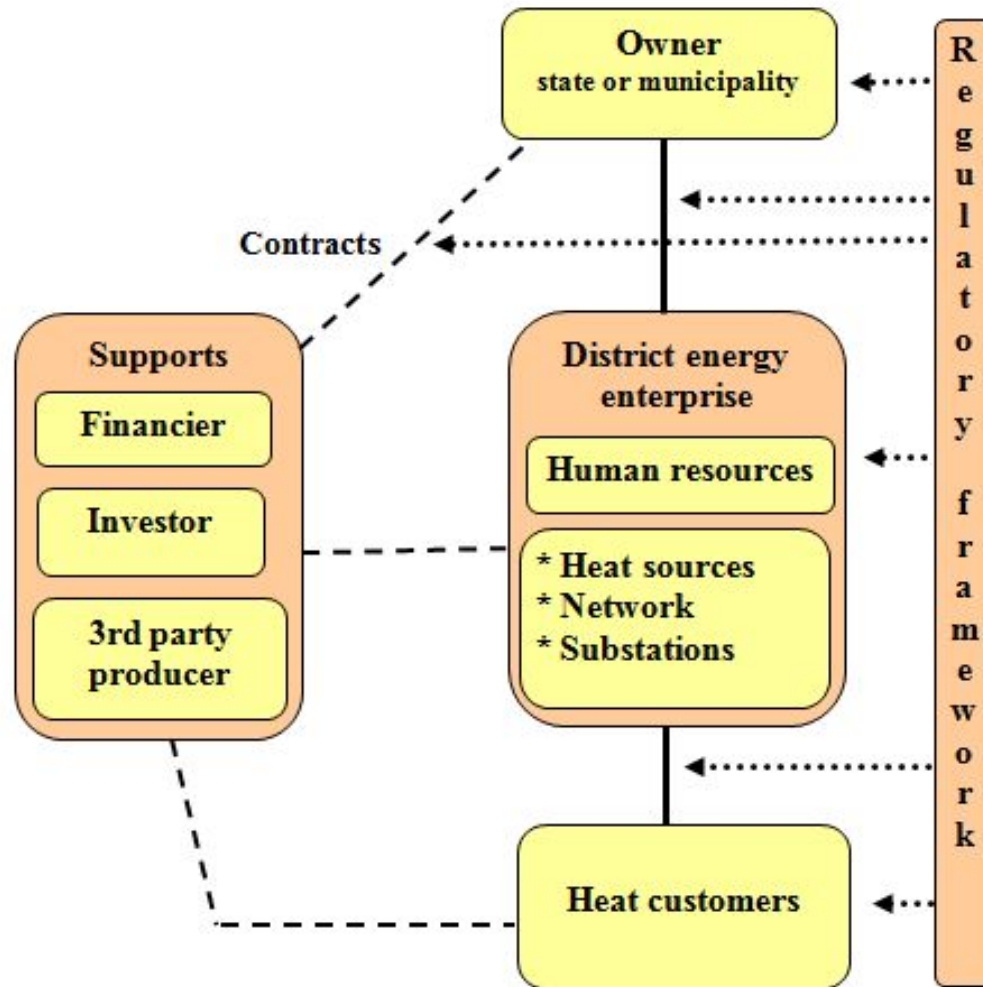
Objectives

Identify and review barriers and best practices for sustainable development of DHC in order to:

- ▶ Facilitate an expansion of DHC systems outside the EU countries in order to increase the global energy efficiency,
- ▶ Mitigate climate change through reduced carbon dioxide emissions, and
- ▶ Increase national security of supply.



Institutional Framework



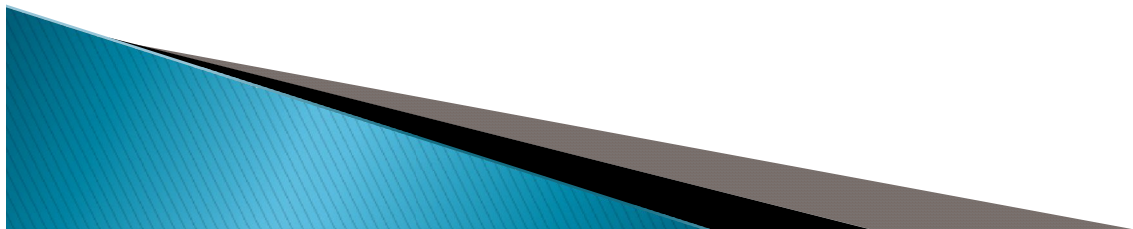
Country Specific Issues – 1

Features and extent of DHC/CHP

- ▶ DHC and CHP market shares,
- ▶ Types of consumption: DHW, SH, water/steam
- ▶ Selected technologies with customer connections,
- ▶ Heat metering rate,
- ▶ Market expanding/shrinking

Development Strategy and Policies

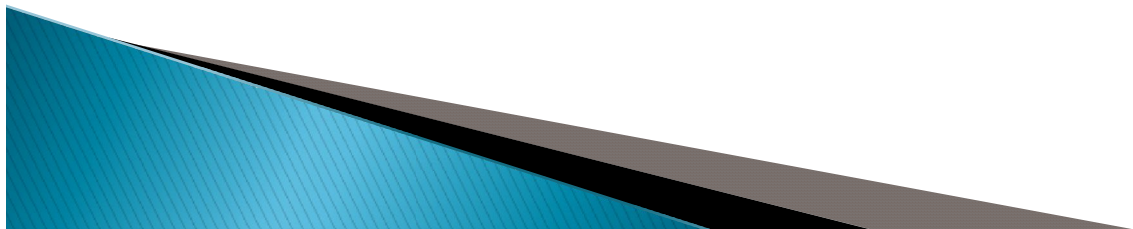
- ▶ National strategy and policy regarding DHC and CHP
- ▶ Market competition and alternative heating modes
- ▶ Market drivers/barriers
- ▶ Energy pricing policy (DH vs. other energy media, differences in price regulations and subsidies, price distortions, restrictions of usage)



Country Specific Issues–2

Control, supervision and regulation of DH sector

- ▶ Analysis of the role of the various governmental entities and the municipalities
- ▶ Tariff setting (Regulated or not regulated, regulator on municipal/regional/centralized level, only residential/all consumer groups, only DHC)
- ▶ Heat planning (does it exist or part of urban planning, indicative or mandatory plan, covers mainly the technical development but also some financial aspects)
- ▶ Subsidy systems
- ▶ Investment support
- ▶ Operation and management of DH
- ▶ Customer protection/motivation



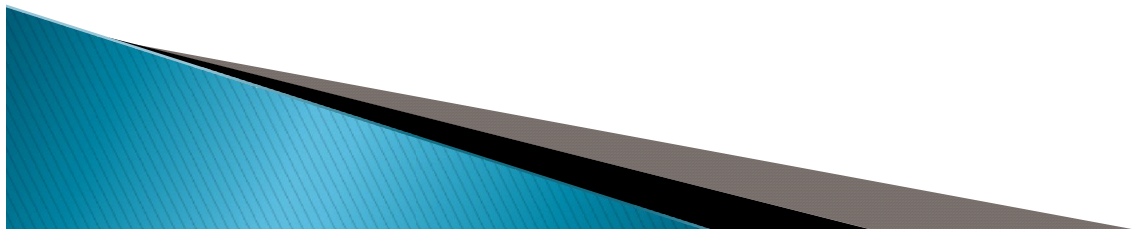
Country Specific Issues–3

DH Legislation and Regulations

- ▶ Identification of laws and regulations, basic features of stipulation
- ▶ Organization and role of the regulator
- ▶ Status, rights and responsibilities of customers regarding DHC
- ▶ Status, rights and responsibilities of DHC and CHP utilities/companies
- ▶ Status of third party access in power (and heat) production

Tariffs

- ▶ Tariff setting process
- ▶ Cost allocation of CHP including emission fees
- ▶ Availability of lump sum/one-tier/two-tier tariffs
- ▶ Tariff development policy
- ▶ Connection/disconnection fees



Country Specific Issues-4

Taxes and Subsidies

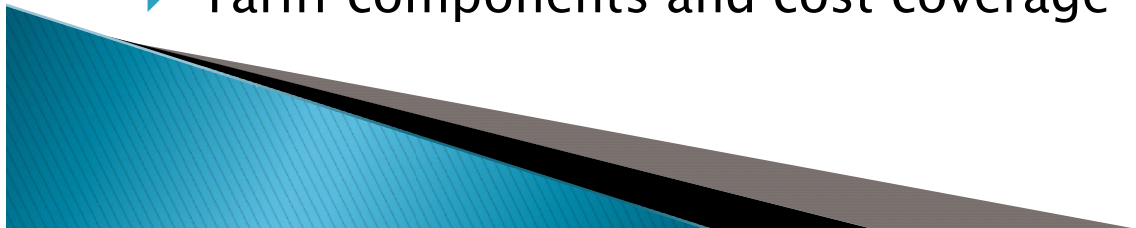
- ▶ Fuel, heat and electricity taxes
- ▶ Subsidies to customers
- ▶ Investment subsidies to DHC CHP

Social Considerations

- ▶ Social assistance programs to allow low-income households to pay for heating
- ▶ Other fuel related poverty problems in market and transition economies
- ▶ Satisfaction to heating quality

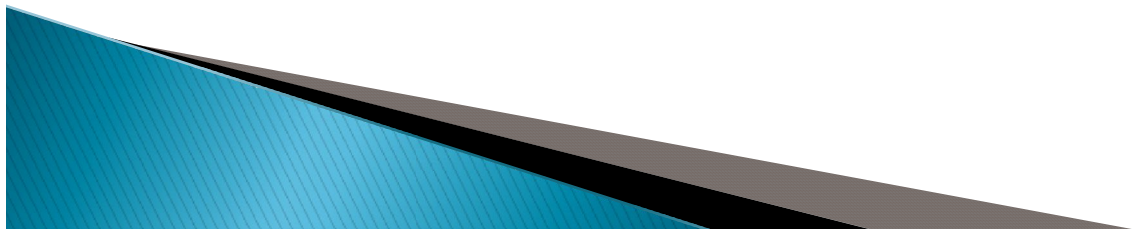
Investment Climate

- ▶ Governmental support/barriers
- ▶ Municipal support/barriers
- ▶ Rights of investors
- ▶ Financing sources
- ▶ Tariff components and cost coverage



Audiences

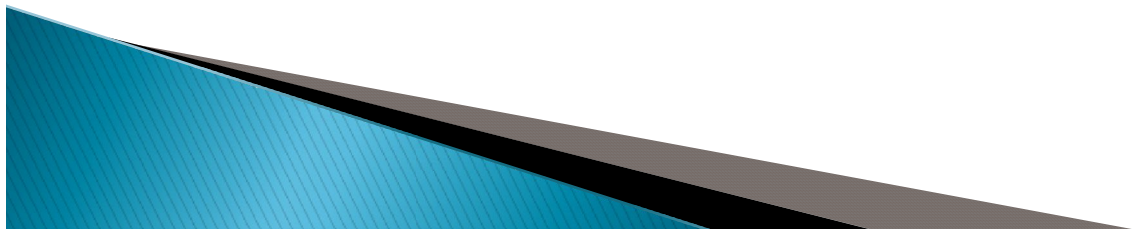
- ▶ The international community of decision makers and financiers (environmental and energy policy) concerning DHC systems,
- ▶ National associations advocating DHC, environmental protection and sustainable development,
- ▶ National governmental departments responsible for energy policies,
- ▶ Price regulation commissions and organizations.



Countries Selected

- ▶ Bosnia & Herzegovina
- ▶ Canada
- ▶ China
- ▶ Croatia
- ▶ Kazakhstan
- ▶ Kosovo
- ▶ Macedonia FYR
- ▶ Russia
- ▶ Serbia
- ▶ South Korea
- ▶ Ukraine
- ▶ USA
- ▶ Uzbekistan

The above countries cover more than 70% of all DH in the world and 95% of DH outside the EU.



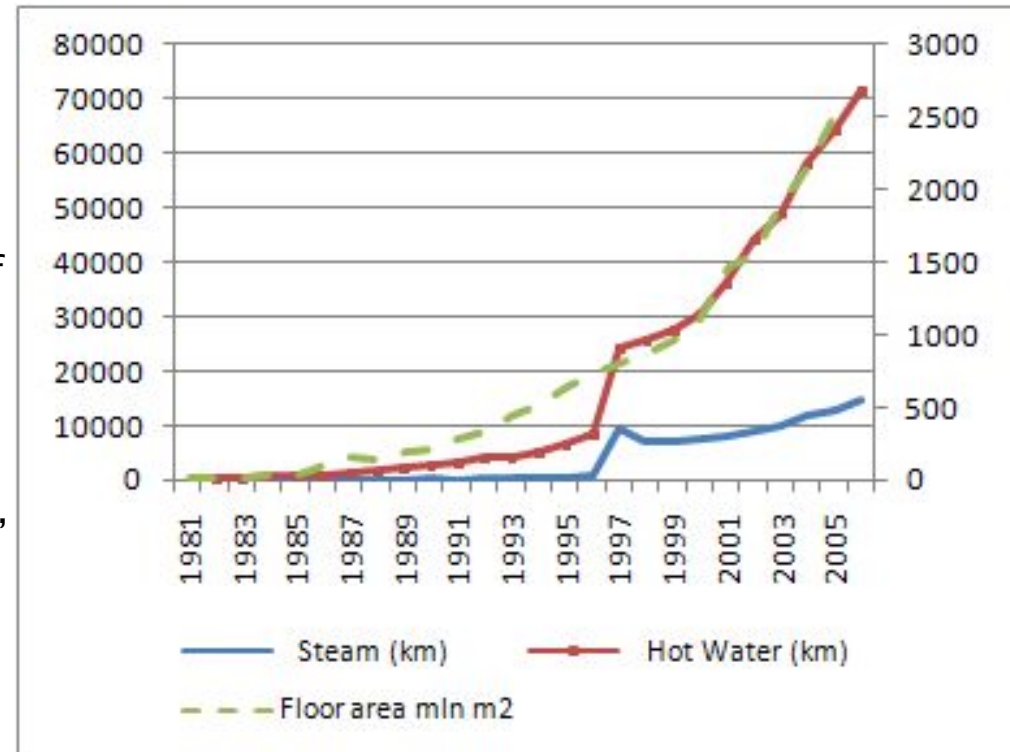
China

▶ Market

- Strong boom in DH growth, more than 10% a year, soon becoming the largest DH country in the world,
- Market drivers: (i) elimination of small and polluting boilers and (ii) strong urbanization,
- Only coal available in large scale,
- Only space heating but no DHW,
- Steam to industry, hot water to others.

▶ Opportunities

- No competitors but strong governmental support.



China

(continued)

Barriers

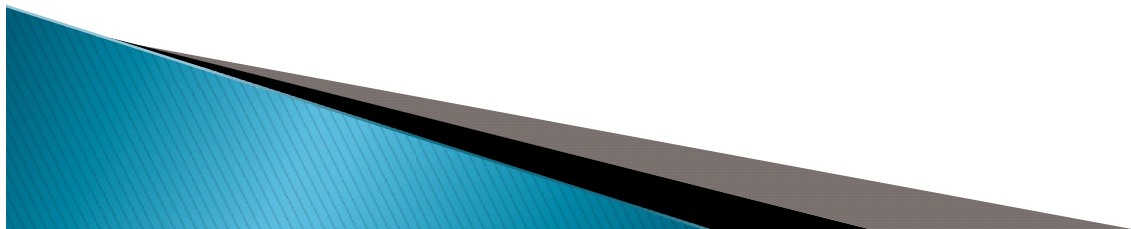
- Strongly regulated sector, but substantial delays from central gov to local gov's,
- Billing of residential customers is still based on lump sum, even though the Heating Reform and Building Energy Efficiency program (HRBEE) requires consumption based billing and low-energy buildings,
- Secondary networks often owned by the customer organizations: poor quality systems with short lifetime,

Recommendations

- ▶ Group substations are used even though building level substations would often provide lower life-cycle costs

A lesson to support the Baltic countries:

- ▶ China and South Korea boost DH and CHP for both environmental and economic reasons .



Ukraine

▶ Market

- Basically all urban areas are covered by DH networks using mainly gas as fuel,
- However, gas heating acquires market from DH especially in the eastern regions,
- Municipalities support gas heating development in eastern Ukraine.

▶ Opportunities

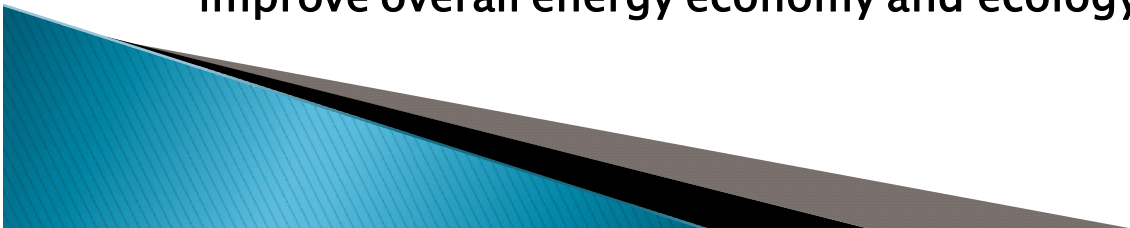
- Gas prices rising to international level would improve viability of DH rehabilitation and introduction of RES.

▶ Barriers:

- National DH policy is unclear,
- DH is in poor technical and financial condition,
- Russian type technology has deteriorated but not rehabilitated,
- Technical standards are outdated and cause excess costs.

A lesson to support the Baltic countries:

- ▶ Continue rehabilitation of DH and increase share of CHP as a means to improve overall energy economy and ecology.



Macedonia FYR

▶ Market

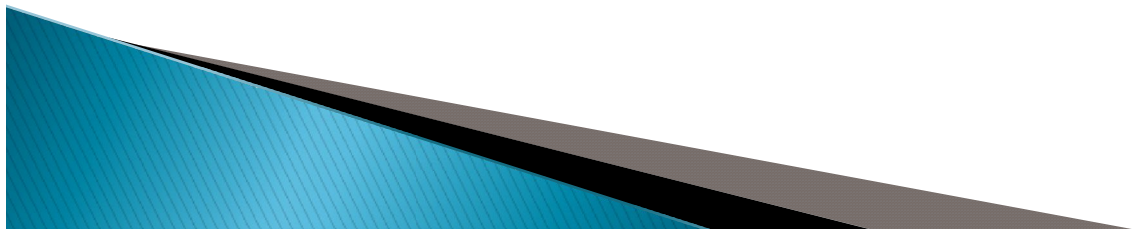
- Slow and realistic growth expected,
- No strong competition by gas expected.

▶ Opportunities

- Regulator requires the heat suppliers to install thermostatic valves and cost allocators at consumers but to be paid by the customers.
- Municipalities are motivated to support DH because they receive concession fees for DH networks,
- Heat suppliers are legally independent on the network ,
- Heat generators are under competition,
- Unpaid bills will be sued in the court and solved in due time,
- Majority of DH companies have been privatized.

A lesson to support the Baltic Countries

- **Competition among heat sources and clear DSM policies enable improved economy of DH system operation.**



Summary of Trends per Country

	BiH	CAN	CHI	CRO	KAZ	KOS	KORM	MAC	RUS	SER	UKR	USA	UZB
1 Nat. DH strategy exists	No	No	Yes	Yes		Yes		Yes	No	No	No	No	No
2 Building regulations with EE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
3 DH prices regulated	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes
4 Main competitor	Gas	Gas	None	Gas	El/gas	Electr.	LNG	Electr.	None	Electr.	Gas	Gas	None
5 Feed-in tariff for CHP and RE	No	No	Yes		No	No	No	Yes	No	Yes	Yes	No	No
6 Emission trading scheme	No	No	No	No	No	No	No	No	No	No	No	No	No
7 Carbon tax in use	No	No	No	No	No	No	No	No	No	No	No	No	No
8 Investment grants for DH/CHP	No	No	No	No	No	No	No	No	No	No	No	No	No
9 DH customer rights (Weak/Strong)	W	S	W	S	W	W	S	W	W	W	W	S	W
10 DH service quality (Good/Poor)	P	G	P	G	P	P	G	G	P	P	P	G	P
11 Billing based on consumption	No	Yes	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No
12 Municipal role (Weak/Strong)	W	W	W	W		W		W	W	S	W	W	W
13 Private sector involvement	No	Yes	Yes	No	Yes	No	No	Yes	No	No	No	Yes	Yes
14 Synergy allocations: CHP/Res													
15 Integrated resource planning	No	No	Yes	Yes	No	No	Yes	Yes	No	No	No	No	No
16 Heat planning and zoning	No	No	Yes	No	No	No	Yes	Yes	Yes	No	No	No	Yes
17 Technical standards	New	New	New	New	Old	New	New	New	Old	New	Old	New	Old
18 Refurbishing strategy in use	Yes	n.a.	Yes	Yes	Yes	Yes	n.a.	Yes	No	Yes	No	n.a.	No
DHW supplied with DH	No	Yes	No	No	Yes	No	Yes	No	Yes	No	Yes	Yes	Yes

Time Schedule

The Full Report will be publically available by summer 2011 at
<http://www.iea-dhc.org/>

Thank you for your attention!

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