



Workpackage 3

Country report

Slovenia

Updated version

Andrej Klemenc
Mihael G Tomšič,

Slovenski E-Forum



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0. Introduction

The Slovene report follows the general outline and structure of the country reports in Realise-Forum.

The report describes the results of the REALSE Forum activities in 2005 and 2006 in Slovenia consisting of:

1. Some relevant general (energy) statistic data for Slovenia. We believe that this will help to understand better the situation within a new EU member state.
2. In-depth interviews with representatives of actors in the Slovene market.
3. Analysis of documents and records on stakeholders' position and viewpoints on RES-E support.
4. Additional research and subsequent analysis of the documents on RES-E policy and support systems in Slovenia and other EU countries in order to increase the comprehension of the most important issues.
5. Analysis of the documents of the main stakeholders in the field of RES-E presenting standings on topics that are relevant for REALISE-Forum.
6. The proceedings of the national desk hearings/workshops on:
 - general issues of RES-E support in Slovenia,
 - main barriers for inclusive governance in the field of RES-E from NGO perspective;
 - perspectives of electricity generation from biogas;
 - situation and perspectives of electricity generation from wood biomass and
 - potentials and barriers for generating "green electricity" from various renewable sources in the country;
 - general policy issues and preliminary results of REALISE Forum project

1. STATE OF THE SLOVENE ELECTRICITY SYSTEM

Table 1: Basic statistic indicators of Slovenia

Population (average for 2005)	2,003,358	
Area	20,273 km²	
Number of households (on 31 Dec 2005)	774,094	
Number of electricity customers (on 31 Dec 2005)	870,593	
Number of natural-gas customers (on 31 Dec 2005)	111,921	
Gross domestic product (GDP)	6,557,698 million tolar	27,365 million euros
Increase in GDP	3.9%	
Inflation	2.5%	
Average exchange rate tolar/euro	239.64 tolar/euro	
GDP per person	3.273 million tolar	13,677 euros

Source: SORS, Energy Agency

In terms of technical performance electricity system in Slovenia is characterised by its small size in absolute terms of installed capacities and generated electric power (see Table 2). The system is connected to systems of all neighbouring countries except Hungary and is supporting transmission of electricity from the Central and SE Europe to the northern Italy. Interconnections with Croatia pose no restrictions to electricity trading, whereas interconnections with Austria and to Italy are satisfactory for exchange and support service but the capacity is not sufficient to remove the high price differential from Italy to Central Europe and the Balkans. A problem of the current situation is that non-commercialised loop currents regularly overload the Slovenia-Italy lines. Total flow of electric power in 2005 through Slovenia was around 8 TWh, compared to domestic demand of 12.5 TWh. A suitable regulatory or economic mechanism to control loop currents is at this time not in practice in the internal EU market.

Table 2: Basic statistic data of electricity

Peak capacity	2,797 MW	
- hydroelectric power		886 MW
- thermoelectric power		1,241 MW
- nuclear power		670 MW
Production of electricity	13,667 GWh	
- hydroelectric power		3,036 GWh
- thermoelectric power		4,601 GWh
- nuclear power		5,613 GWh
- independent and qualified producers		417 GWh
Length of transmission network	2,534 km	
- 400 kV		507 km
- 220 kV		328 km
- 110 kV		1,699 km
Length of distribution network	59,317 km	
- 110 kV		793 km
- 35, 20 and 10 kV		15,851 km
- 0.4 kV		42,675 km
Consumption of electricity	12,389 GWh	
- direct customers		2,775 GWh
- eligible customers		6,539 GWh
- tariff customers		3,075 GWh
Annual consumption per person	6,176 kWh	
Average household consumption per month	314 kWh	

Source: Companies' data

The electric power production park matches the demand in the country, though half of the production of the nuclear power plant has to be delivered to the Croatian shareholder, so an equivalent quantity (app. 2.5 TWh) has to be purchased outside the country. Lack of hydro-storage capacities and limited capacity peak-service gas turbines is causing problems with peak load curve management. Hydro storage capacities in construction and planning as well planned peak gas turbines might solve the problem. However on the other side this supply side options may be outmatched by increasing demand for peak load due to inappropriate tariff system.

The electricity system is further characterised by comparable shares hydro, power and nuclear outputs, and negligible dependence on natural gas. Large share of non-fossil primary sources cause relatively low emissions of CO₂ per generated MWh (see Table: 4), CO₂ emissions of thermal power plants (see Table: 5) are however relatively high due: marginal role of natural gas in generating electricity, low quality of domestic coal and obsolete coal power plants.

Last but not least the electric power intensity of Slovenia is well above the EU average both in terms of per capita annual consumption and much more so as in terms of kWh per unit of GDP. During the period 2000-2003 the electric power intensity was even increasing. In recent years electricity consumption is slightly outpaced by strong GDP growth.

Figure 1: Structure of production sources for electricity in Slovenia in 2005

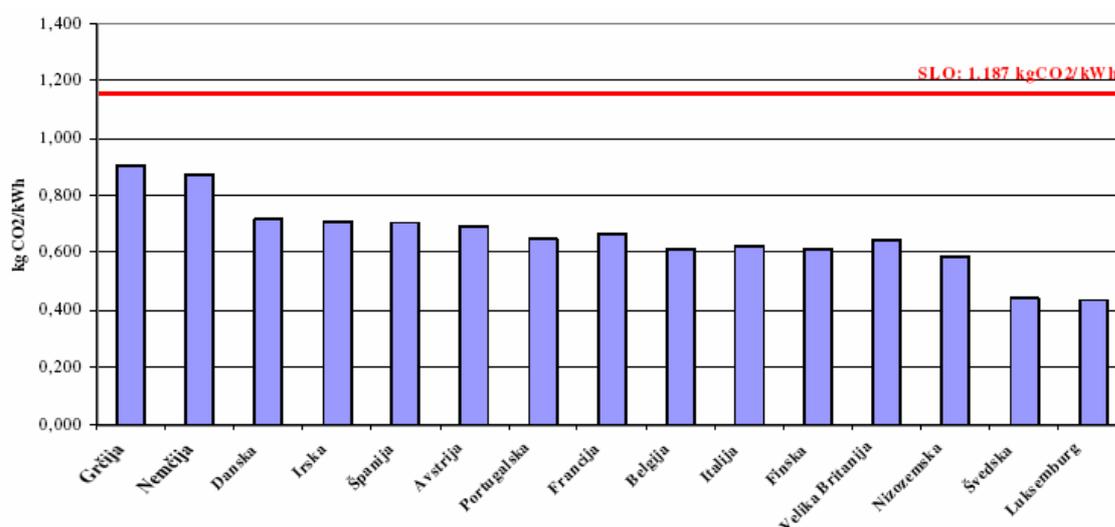
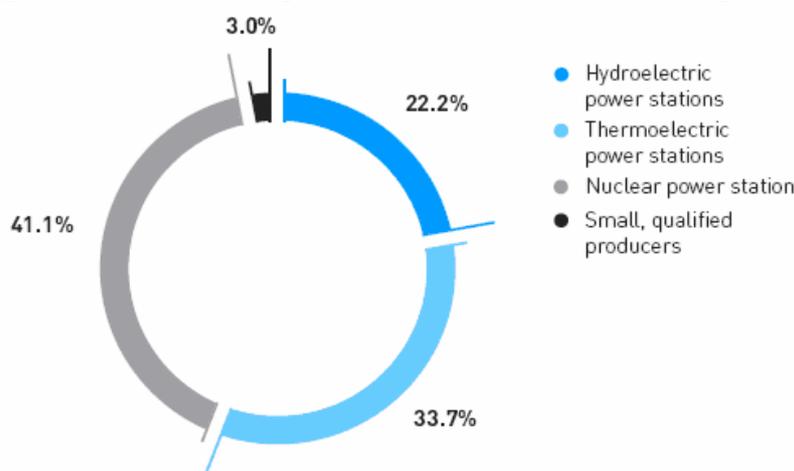


Figure 2: Specific CO₂/kWh emissions from EU 15 and Slovenia in 2002 – thermal power plants

Source: Program in predlog razdelitve emisijskih kuponov za obdobje 2008-2012, Elektroinštitut Milan Vidmar, Ljubljana: 2004

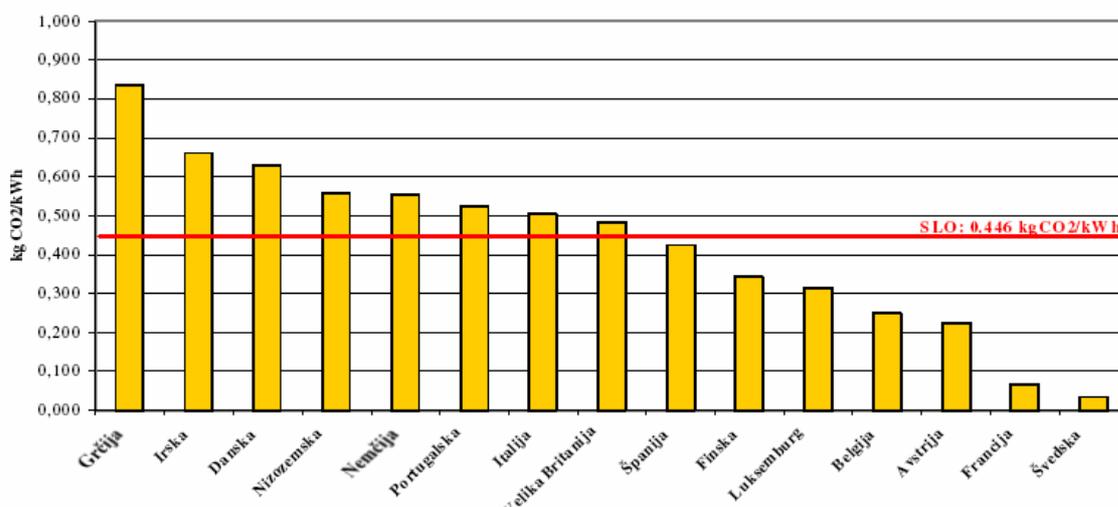


Figure 3: Specific CO₂/kWh emissions from thermal power plants in EU –15 - all power plants

Source: Program in predlog razdelitve emisijskih kuponov za obdobje 2008-2012, Elektroinštitut Milan Vidmar, Ljubljana: 2004

For more than five decades the development of the electricity system in Slovenia has been based exclusively on planning instruments. In this period the electricity sector has significantly increased in terms of generating and grid capacities and succeeded to provide electricity supply to almost every single household in the country and to cover demand for an electricity intensive industrialization. Integration in UCPTe in 1970ies enabled limited yet for security and quality of supply important exchange of electricity with the grid in Western Europe while as a part of electricity system of former Yugoslavia its generation capacities have been backed up both with reserve and with peak load storage capacities. The supply of electricity generation from other Yugoslav republics, especially from energy rich Serbia and Bosnia and Herzegovina depended on political bargaining. Capacities to supply electricity have provided strong “arguments” within the political bargaining process in the communist Yugoslavia in general. By enlargement of on domestic coal generating capacities and, at very first, by operation of nuclear power plant Krško – a “joint venture” with republic of Croatia – in 1980ies the political and economic vulnerability of Slovenia was significantly reduced. On the other side the corporative interest of coal mining, electricity generation and large industrial consumers threatened structural and environmental modernisation of the country’s economy.

During the 1980ies the formula “electrification plus industrialization = progress” was put under the question both with country’s leading macroeconomists and the reform wing of the communist party as well as by an emerging civic environmental and nature protection opposition to expansionist plans of the energy sector. As a result, further construction of nuclear power plants was abolished by a law valid until the year 2000. “Clean air” activities were drafted and energy efficiency gained priority at least in political rhetoric.

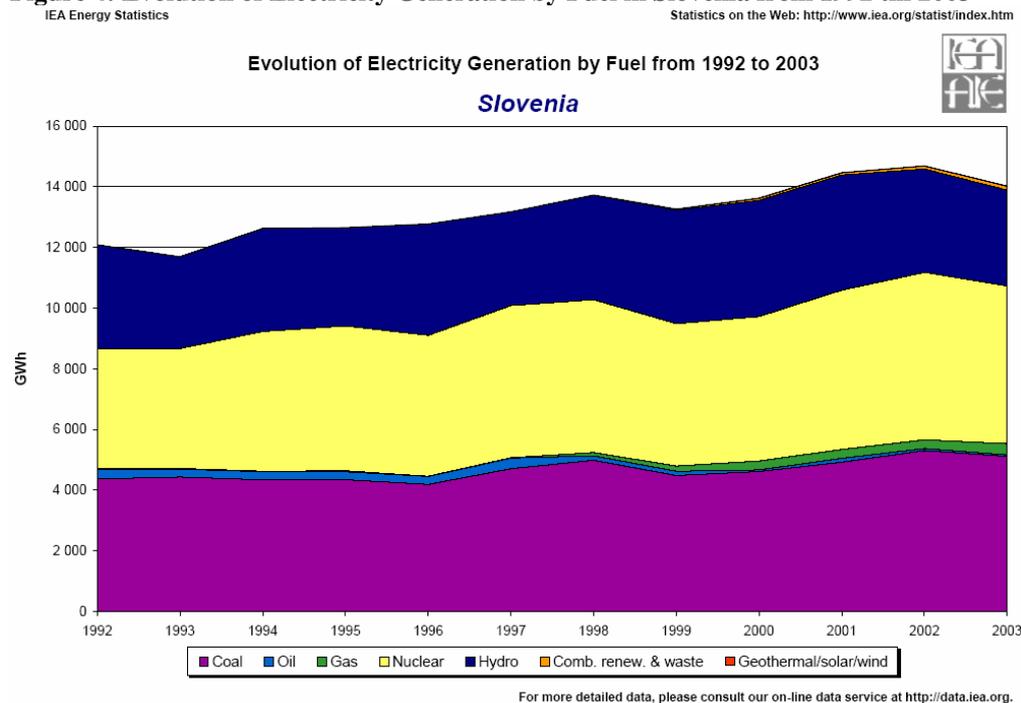
First plans for restructuring of the electricity sector and energy policy in general were raised by the country’s first multi-party free elected government in 1990. The struggle for independence and international recognition at the beginning of the 1990ies and economic recovery after disintegration of the communist Yugoslavia however influenced the political agenda. Contrary to some expectations, the transition period market and energy efficiency reforms were gradual.

In summer 1991 when Slovenia proclaimed its independence the energy sector was in domain of Republic Secretariat for Energy that in 1992 - after the reform of political system to parliamentary democracy - changed its name to the Ministry of Energy of the Republic of Slovenia. The reform of the Government after the election in 1994 however integrated the task and responsibilities for energy supply and policy within the Ministry of Economic Affairs in a form of Energy Office (first as a Secretariat, now Directorate), which also retains most of the ownership rights of state companies (oil, gas and electricity). Provision of state guarantees and energy taxation remained in

hands of the Ministry of Finance, the price controls, foreign investment, trade, competition regulation and consumer protection in domain of Ministry of Economic Relations and Development (now defunct and integrated into the Ministry of Economy), while the issues of urban planning, site license, nuclear safety, building codes, approval of environmental impacts assessment and issuing of concession for exploitation of natural resources at the Ministry of Environmental and Physical Planning.

In the year of 2001 next large institutional set-up change was introduced by transfer of most of energy competencies of the Ministry of Economic Affairs to the Ministry of Environment, Spatial Planning and Energy. However in the year 2005 most of those competencies (except energy efficiency and no-electricity renewables) were transferred back to the Ministry of Economy (former Ministry of Economic Affairs).

Figure 4: Evolution of Electricity Generation by Fuel in Slovenia from 1992 till 2003



Minister of Economy still tightly controls all electricity companies. The power generation sector has now (2006/2007) been largely integrated into two companies of recent design: Holding Slovenskih Elektran (HSE) and GEN-Energija. The former controls approximately 60% of domestic electricity production and the later approximately 30%, of which the production of the Slovenian half of the nuclear power plant Krško.

Planning and decisions on new capacities to be built by each company is largely influenced by the government.

A major new power plant to be built by HSE is a 600 MW coal (lignite) fired thermal power plant in Šoštanj, to replace obsolete coal fired generation units at the same site, that of the Power Plant Šoštanj. This project would initially even increase the capacity at the site from the present 750 MW to over 1.200 MW.

Construction of any gas-fired capacity depends on possible foreign partners, such as the Russian gas interests. A large gas fired power plant would only be practical in the case of a new gas pipeline construction in the direction Hungary-Italy, whereas some smaller gas power capacity can be based on the existing gas transmission capacity. As for the gas pipeline running across Slovenia towards Italy, this can be alternatively viewed as a branch of the Nabucco project, though it was not officially considered as such.

In 2006 a second nuclear power plant was declared as one of the major long-term projects for Slovenia by the government (decision of October 12th 2006). Nuclear option is thus in a strong

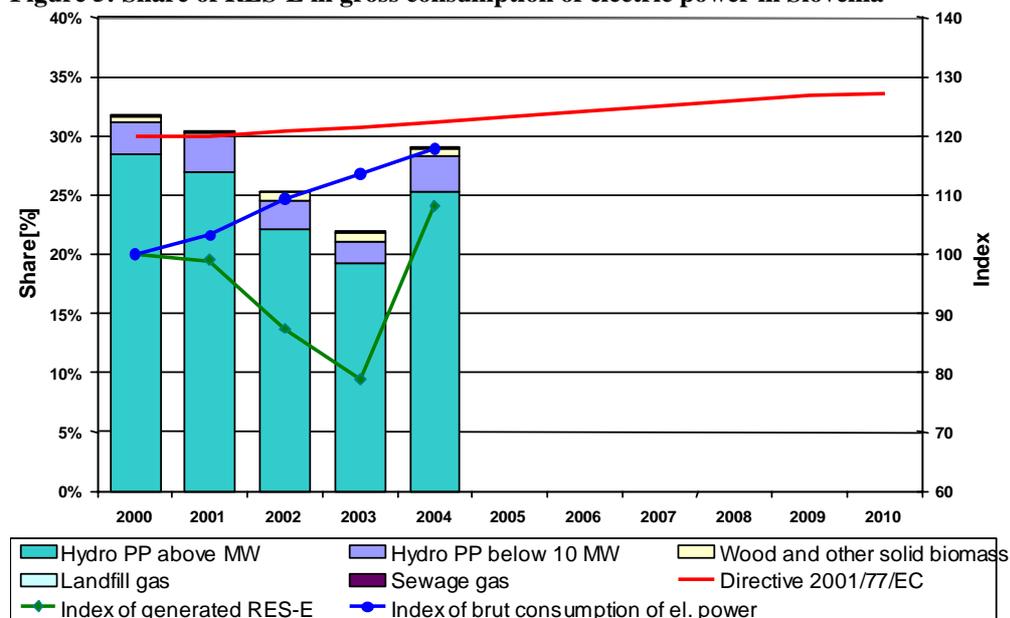
revival, but the country has not yet even solved the problem of location of a final depository for low and medium level radioactive waste, less so for the final storage of spent fuel. It is obvious also that the government underestimates the problems of fitting a large power plant (1,000-1,400 MW) into the miniature electric power system of Slovenia, as the system has to provide full backup for the total capacity.

New high capacity transmission lines (400 kV lines) are planned as follows:

- direct link from the NPP Krško to the Ljubljana area,
- link to Hungary, to meet an existing new line in the area of triple border point (H, HR, SLO), and
- a link to Italy.

The SLO-I line is listed as an EU TEN project, to support market integration. In Slovenia, this project may reach opposition due to landscape protection reasons and is currently not well established. The Krško – Ljubljana link (together with the SLO-I line) will serve well for the second nuclear power plant that is envisaged on the site of existing Krško NPP. H-SLO line may be useful for better connection with the Central-Eastern Europe, which is though now served by an almost parallel line in Croatia. In all, the planned transmission lines emphasize the concept of central power generation and the dubious value of long-range transport of electric power in Europe.

Figure 5: Share of RES-E in gross consumption of electric power in Slovenia



By far the largest share (around 98,5%) of RES-E in the country is generated in large (10 MW) and small (10 MW) hydro power plants. The share of the later in the total hydropower production is varying around 10 %. Due to relatively large oscillations of the volume of flow of water - conditioned by annual variations in the amount, form and pattern of precipitation - the generation of electricity from power plants is oscillating substantially as well.

In recent years a trend of slight increase of RES-E generating capacities in general and especially from wood biomass and sewage gas can be identified. In spite of this the share of RES-E is actually shrinking due to over-proportional increase of total electricity consumption in the country that increased in an average between the year of 2000 and 2004 by 4,2% per year¹. Even taking

¹ Unofficial data for 2005 suggests an increase of 3,6 %
<http://www.energetika.net/portal/index.html?ctrl:id=window.default.Navigation&ctrl:type=render&ec%3Adet=26781&ec%3Acat=1&en%3Aref=cat>

into account that in the years 2002 and 2003 the generation of RES-E was reduced by unusually dry spring and summer seasons, the trend is suggesting that Slovenia is not on its way of meeting its RES-E target. The same trend can be observed also at the level of the share of RES in the total primary energy consumption.

2. ACTORS INVOLVED IN THE NATIONAL ELECTRICITY MARKET

2.1. Market regulator:

Energy Agency of the Republic of Slovenia is a public agency with duties of an independent regulator of the energy market and is also a member of AIB, the international association of issuers of green certificates. In March of 2004 the Agency started issuing and tracing certificates for electricity from renewable energy based on RECS International standards².

According to the Article 19 of the Energy Act the Agency is also eligible for issuance of general act on identification and presentation of individual electricity generating sources. The Act was prepared at the end of 2004, confirmed by the Government of RS in 2005 and came to force on January 1st 2006.

The Energy Act also provides possibility for an electricity generator to claim the certificate of origin for all or a part of its generating capacities from the Agency. In 2004 the Agency drafted corresponding procedures. A Decree on this effect was issued by the Government at the end of 2005. Till present large majority of RES-E is certified according to the RECs scheme.

2.2. State actors:

The Ministry of Economy, (MG - Ministrstvo za gospodarstvo), is responsible for energy, except for rational use of energy and non-electricity generating renewable energy. Its Energy Directorate, headed by a Director is responsible for energy supply and demand actions, preparation of policy instruments and measures including feed in tariffs for RES-E respectively for electricity generated by qualified producers³.

The Ministry of Environment and Spatial Planning (MOP – Ministrstvo za okolja in prostor) is among other also in charge for national spatial planning and environmental impact legislation for energy generation, transmission and distribution capacities. Its Directorate for European Affairs and Investments was established to coordinate and manage Slovenia's accession to the European Union in relation to the environment, as well as to coordinate all international activities of the Ministry of the Environment and Spatial Planning. Within the Directorate the Sector of Activities for Energy Efficiency and Renewable Energy is in charge for the preparation, management and co-financing of investment projects for rational use of energy and renewable energy in transport and heating sector as well as networking, training, information, awareness raising and education activities in the general field of renewable energy and energy efficiency.

Ministry of Finance (MF – Ministrstvo za gospodarstvo) is controlling electricity prices for non-eligible customers and is issuing consent to changes of feed in prices/premiums for qualified generation of electric power.

Environmental Fund (Ekološki sklad, Eko-sklad), established by the Government in 1993, is the largest public financial institution in the field of environmental investment support. Besides other environmental investments Eko-sklad is also providing soft loans for investment in renewable energy and energy efficiency in final use, to natural and legal persons and is also supporting awareness raising, information distribution and education activities in the field.

² In the year of 2004 the Agency issued 2.178.544 RECS certificates – all of them to HSE Ltd.

³ Qualified producers include both RES and high-efficiency CHP.

2.3. Parliament/Party Actors

Within the Parliament, the body responsible for energy matters is the *Committee for Infrastructure and Environment*. The Committee organized in March 2005 a public presentation of statements and initiatives on RES that turned into promotion campaign for wind energy projects of state owned distribution company Elektro Primorska in SW Slovenia. These projects are strongly opposed by coalition of nature protection NGOs and civil initiatives. An NGO coalition publicly protested the misuse of democratic communication by the chairman of the Committee that provided procedural and time advantages for state owned corporate interests within the conflict.

The present *Centre-right coalition platform* includes the transition to a more liberalized and transparent development with specific commitments on privatisation, deregulation and active support to more competitive power sector, however with few specific commitment to sustainable development and still under strong influence of supply side corporate interests. No "green" party or a party with strong environmental agenda has succeeded to reach the minimal quorum to enter the parliament in the last elections (2004)⁴. Prior to the elections of 2004 *GLOBE Slovenia* - an organisation of the environmental sensitive members of the Parliament – organised several public meeting and hearings on climate change, energy policy and renewable. After the elections of 2004, activities of GLOBE are essentially discontinued.

2.4. Environmental/nature protection groups.

The following NGOs are most active in the energy sector:

- *Slovenski E-forum* society for energy economics and environment (SE-F, www.se-f.si) is a semi-professional NGO with individual (non-corporate) membership mostly of experts in the field of renewable energy, efficient energy generation and use, energy conservation, energy planning and climate change. Its activities address general energy and environment issues (energy policies, energy efficiency, RES, climate change); project work includes climate change awareness programmes (primary and secondary schools) as well as awareness raising project on specific RES-E technologies (biogas and wood biomass in particular). SE-F is a member of several international NGO networks.
- *Fokus*, association for sustainable development (www.focus-ngo.org) is another citizen's association in the field of environment and energy, preliminary focused on awareness raising on mitigation of climate change on national and EU level. It is strongly pro RES profiled and is active in the field of general environmental NGO platform for RES.
- *Društvo za opazovanje ptic Slovenije* (DOPPS, www.dopps.org) is a Slovene member of Bird-Watch International and the most professional and established nature protection NGO in the country. Although it is not positioned against RES-E in general it is opposing most of the actual wind farm projects in the country and is reserved toward expansion of hydro power plants based on fear of losing important nesting and migration bird resort areas. As the only environmental and nature protection organisation that has (based on Nature Protection Act) obtained status of NGO acting in the public interest it is a pillar of nature protection NGOs and civil initiatives⁵.
- *Umanotera* (<http://www.umanotera.org/>) "The Slovenian Foundation for Sustainable Development" is a semi-professional NGO with general pro-environment profile. Of the

⁴ A minimum of three mandates for a party to enter the 90-member parliament is required. The election system is predominantly proportional, so approximately 4% of the popular vote is needed.

⁵ Within the conflict on Volovja Reber wind farm project this status was in 2005 later denied by the Agency of Environment of the RS however this decision was overruled in 2006 by Supreme Administrative Court.

energy-related issues, Umanotera is most active in climate changes. On energy topics, Umanotera has teamed up with SE-F and Fokus on several occasions.

- **Other NGOs and associations.** Environmental organizations are registered as societies under general legal provisions, and with the Ministry of Environment and Spatial Planning. Conditions for “societies acting for public good” have been recently defined. For generally small and non-professional environmental organizations the conditions are rather harsh.

2.5. Professional/business associations

- **Slovenski nacionalni komite WEC** (SNK-WEC; National committee of the World Energy Council, www.snk-wec.si) mostly represents supply side interests. Institutional members are mostly energy supply companies. In recent years (2000-2002) SNK-WEC held several contracts for preparation of an extensive expert background document for the National Energy Programme.
- **Zveza društev za male HE** (ZD-MHE; Union of Societies of Owners and Operators of Small-Hydro PP, www.ekowatt.si) represents the interests of small private hydro power plant owners. Most of small hydro power plant owners - except those facilities owned by distribution companies and the industry – are joined in the Association of the Owners and Operators of Small Hydro Power Plants that was founded in 1988 according to the Act on Associations and is thus member servicing NGO. Nowadays it has about 300 members and is a member of European Small Hydropower Association : ESHA.
- **Društvo za sončno energijo** (SLOSE, Slovenian solar association, e-net@siol.net) and **Slovensko društvo za alternativne vire energije** (ISES-SLO, akrainer@fgg.uni-lj.si) are active in the area of passive and active solar thermal utilisation and photo-voltaic.
- **Elektrotehniška zveza Slovenije**, (ETZS; professional society of electrical engineers, www.ezs-zveza.si), is issuing a professional journal and organises topical discussions on electric power sector issues.
- **Zveza strojnih inženirjev Slovenije** (ZSIS, Mechanical Engineers and Technicians Alliance of Slovenia, zveza.sits@guest.arnes.si) is a professional organisation of mechanical engineers. It has a section for energy. In 2001 and 2002 it held a contract to organise a broad technical (internet based) discussion on the national energy programme (in preparation).
- **Slovensko društvo za daljinsko energetiko** (SDDE, Slovenian District Energy Association, www.drustvo-sdde.si). Two sectors are most active: district heat supply and gas supply. Biomass based heat and CHP suppliers are also present. It holds a successful annual conference.

Regular professional meetings, addressing also RES-E issues, are organised by the **Slovensko društvo CIGRE / CIRED** (National branch office of the international association for electric power transmission and distribution, www.cigre-drustvo.si) and by the University of Maribor – "Komunalna energetika/Power Engineering".

A major annual energy event is also “**Energy Managers’ Days**”, **Dnevi energetikov**, organised by **Jožef Stefan Institute (Energy Efficiency Centre)**, for the efficiency office of the responsible Ministry, now the Ministry of Environment and Spatial Planning.

Consumer’s protection/Green Consumer associations: **Zveza potrošnikov Slovenije (ZPS** - Consumer Association of Slovenia, www.zps.si) is the largest and only internationally networked consumer’s protection organization in the country with reputation of successful advocacy of consumer interest with references in public service obligation services however - for a time being - not involved in (green) electricity issues.

Economic Actors/Power sector companies:

Except CHP of Ljubljana (TE-TO Ljubljana) that was since 2003 until recently operated under the special status of qualified electric power producer, Thermal Power Plant of Trbovlje (TET) operating under priority dispatch regime and Nuclear Power Plant Krško (NEK) all the major electric power generators and the country's only operating coal (lignite) mine in Velenje are since 2001 joined within the state owned *Holding of Slovene Power Plants Ltd.* (HSE, Power plant holding company). HSE Ltd. is aggregating and representing strong corporative interests of national supply side that are beyond the market game.

“Modra energija” (Blue energy) is a label for electricity generated in HSE “hydro division”, namely in companies Dravske elektrarne (HPP on Drava basin), Savske elektrarne (HPP on Sava basin) and Soške elektrarne (HPP on Soča basin). HSE Ltd. is a member of RECS International Association and its “blue energy” is since March of 2004 RECS certificated. “Blue energy” is traded directly to the customers of HSE or through all five distribution companies⁶. In 2005 HSE provide 846 eligible customers with the total of 24 GWh of “blue” electricity – equal to approx. 0,16% of total consumed electricity in the country, less the 0,5% of total generated power in hydro power plants in Slovenia.

GEN-I Ltd. was established in September of 2006 after state owned seller of electricity from Slovene part of NPP Krško GEN-Energija bought 50% share in Istrabenz-Gorenje Energetski sistemi – the largest private trader of the electricity in the country – as a daughter company of both partners. The joint venture will enable purchase of 30% of electricity generated in Slovene part of NPP Krško to be sold in 2007 by GEN-I and it is expected that after 2008 this share will raise to 60%.⁷

In addition to the Slovene part of NPP Krško also the gas-fired power plant Brestanica and chain of hydro power plants on Sava (Savske elektrarne) are being transferred to GEN-Energija in the near future (starting in 2007), thus creating second economic actor in the field. In this dubious manner the government is supposed to break the monopoly of HSE Ltd. in generating and trading of electric power in the country, and to establish the so called “second pillar” of the national electric power system. According to the plans of the government “the second pillar” (GEN-Energija) should remain in full ownership of the state whereas a minor share of HSE Ltd. should be sold to foreign strategic investor, the major share still to be retained in the hands of the state.

Ekowatt Ltd. - “green electricity”

Most of the owners of small HPP are since 2000 selling electricity under a “feed in” scheme to distribution companies – local monopolies. A smaller group of 19 hydro power producers established a company, Ekowatt Ltd., with a mission to sell the electricity directly to the customers on the basis of bilateral contracts. Ekowatt Ltd. introduced in 2002 the label “zelena elektrika” (“green electricity”). It found first customers in 2003 and managed to sell first amounts of electricity on the basis of bilateral contract in 2004. Next to sales of electricity generated from licensed capacities of their owners the company is also trading electricity from other renewable sources of qualified electricity generation whereas small additional fee is offered for the members of Association of the owners and operators of small HPP. Ekowatt Ltd. is tracing and keeping records on the origins of their electricity, however it is not providing the certificates of origin yet.

⁶ The customers can buy “blue energy” at the level of any share of their electricity supply contract starting from 10 %. Most of the RECS certificates that were issued to HSE by Energy Agency of RS in the year of 2004 were spent for certification of exported electricity and first at the end of 2004 first certificates were actually used for certification of renewable origin of electricity purchase to indigenous customers.

⁷ <http://www.istrabenz.si/slo/novinarskosredisce/sporocilazamedije/679>

Power distribution companies

Five predominately state owned distribution companies (app. 80% state owned) have not yet being transparently unbundled the commercial and public service activities and are effectively in oligopoly position regarding retail sales of electricity. All of them also own and operate small hydro power plants. The largest hydro power plant park is operated by Elektro Gorenjska (North-west Slovenia). Elektro Primorska is active in developing wind potential in its service area.

Elektro Ljubljana Ltd. The largest distribution company in the country introduced in 2004 a new product under the label of “zelena energija” (»green energy«) as a part of its market activities. It is indeed electricity coming from the company’s own small hydro power plants, offered to the customers for a surcharge of 1 SIT/kWh (0,42 Euro cent) above the standard regulated price for tariff customers. The earning from the surcharge are collected in a fund and earmarked for refurbishment of existing “green energy” generating capacities and/or for investment in new environmental friendly generation capacities or for rational use of energy. No precise definition for “environmental friendly generation” is given.

Next to its own “green energy” the company is also selling “modra energija” (“blue energy”) from HSE – Holding of Slovene Power Plants.

Economic Actors/Industrial companies: Some traditional industries (pulp and paper, textiles, steel mills) operate small hydro power plants. Unexploited potential exists on or near industrial estates. Paper and pulp factories, wood saw-mills, wood-parts and furniture companies operate biomass heat and power plants of traditional design (back-pressure and/or condensing steam turbines). In a few cases, this potential has been expanded to provide service to the nearby settlements (e.g.: Železniki district heating scheme, expanded in 2002).

Economic Actors/Equipment manufacturers: The capability for delivery of large hydro-power plants exists in the country (Litostroj and other companies). This industrial cluster is influential in lobbying for large hydro power plants. A major chain of HPPs is under construction (Lower Sava Project comprising 4 power plants beyond the initial, already completed plant, total chain capacity app. 200 MW). Other large (above 10 MW) hydro power plants are envisaged.

Small HPP’s can also be delivered, but the producer(s) are not a major development factor. Mostly, small hydro turbines are a side product of other production (e.g., production of pumps; Litostroj and/or Turbo-Institute). Construction of small HPP is generally managed by project owners.

Consultants and research institutions: A broad range of consulting is available in the country. Policy studies have recently been performed by two major consulting and research organisations: "Jožef Stefan" Institute Ljubljana (IJS, <http://www.rcp.ijs.si/ceul/>), a multi-department national institute of advanced research and technology, and Elektroinštitut "Milan Vidmar" (EIMV www.eimv.si), traditionally the R&D base of the power sector. IJS has also provided the background studies for the RES support scheme (the feed-in tariff), CO₂ tax and climate change mitigation strategies.

The "Jožef Stefan" Institute, Energy Efficiency Centre is the national contact point of several European networks, such as OPET (Organisation for promotion of energy technologies); jointly with the Faculty of mechanical engineering in Ljubljana and the Buildings Research Centre (Inštitut za gradbeništvo) and ENER (European Network for Energy Economic Research) and interest groups, such as COGEN-Europe.

Several small companies are active in renewables consulting, of which of the longest standing is the Agencija za prestrukturiranje energetike d.o.o. (Agency for Energy Restructuring Ltd –ApE, www.ape.si), a private company, now active in the following areas: wind, biomass, photovoltaics and local energy concepts. More recently established and expanding companies in the field are IREET (an Energy, Ecology and Technology Research Institute, www.ireet.si), a private research institute that operates both in Slovenia and outside and Eco-Consulting d.o.o.

(www.eco-con.si), a private consulting company, which offers a wide aspects of services in the field of RES and RES-E.

The less favourable situation for small-scale energy projects in the market has resulted in a relative weakening of existing consultant companies and an increase in a number of those seeking fortune in new areas.

Public Energy Agencies: At the end of 2005 GOLEA was established in Nova Gorica - covering part of SW territory of the country - as the first local energy agency in Slovenia, followed in 2006 by local energy agency of Pomurje (NE of the country, www.lea-pomurje.si) and local energy agency of Podravje (Central North) EnergaP (www.energap.si). It is expected that in the year of 2006 next three local energy agencies will be established. Since however public funding for typical local energy agencies is low both at national and local level it is not likely that the agencies will soon develop in influential and independent actors but one rather fears that they will be forced to compete for meager public funds against each other, and remain on the other side under strong influence of local corporate business and political interests.

3. SUPPORT INSTRUMENTS FOR RES-E

Presently, a feed-in tariff is the main policy instrument for the support of electricity production from renewables.

Biomass and solar energy utilisation for heating services are promoted by subsidies provided by Ministry of Environment and Spatial Planning (www.aure.si).

Soft loans of *Environmental Fund of the Republic in Slovenia* (www.eko-sklad.si) are also in place for generating electricity from new renewable sources (excluding mid and large sized hydro PP) and small CHP.

Some positive differentiation between fuels is provided by an excise tax and a CO₂ tax, however all electricity generated in thermal power plants is exempted from the tax.

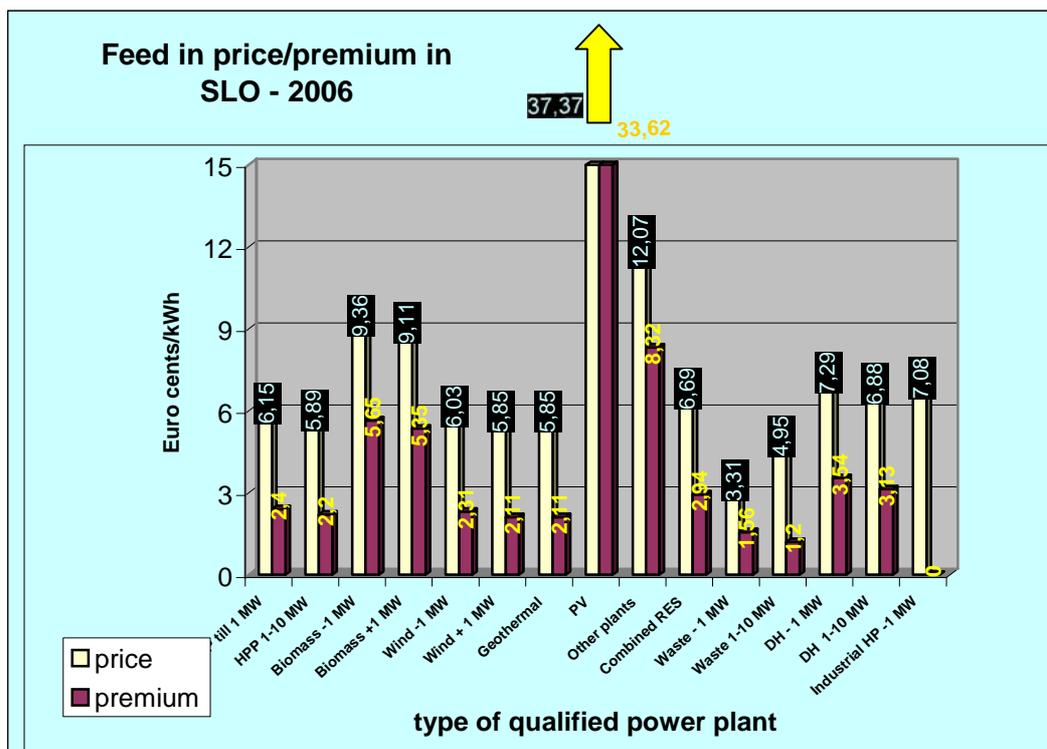


Figure 6: Unified purchase price/premium for RES-E qualified power generators

The increase of the feed in tariffs/premium by the Government Decree in January 2004 is the most important instrument to stimulate the increase of RES-E generating capacities. Modifications of the current scheme are however possible only with consent of European Commission because the scheme is since the beginning of 2006 under investigation for being non-declared state aid. Anyway, in August 2006 the Government based on the argument of substantial growth of the fuel price introduced the increase of the tariff/premium for electricity generated from wood biomass and natural gas generated CHP. In addition the government removed differentiation of tariff/premium for solar electricity generation installation below/above installed 36 kW by unifying tariff/premium to the upper level. Figure 10 illustrates current feed in tariffs (price/(premium) in Euro cents (1 EUR cent \approx 2,40 SIT)

The current feed-in tariffs seem to be especially attractive for biogas CHP, notably for larger units designed for fermentation of biodegradable waste from slaughter and food processing industry. In 2006, the first modern large biogas CHP (1,8 MW) started operation and it is expected that the next two, with installed power of 1,5 MW each, will be in operation till the end of the year. About 4-6 MW of new capacity are further in planning. It is expected that since the year of 2005 within two years total generating capacities will raise from 0,6 MW to about 10 MW! Nevertheless the experts believe that for new increase of capacities either investment support from EU cohesion or other (national) funds would be needed or more differentiated tariff/premium with stronger support to smaller generation units based on agricultural inputs will be needed to deploy additional potential in the agricultural sector.

Next to hydro the country's largest renewable energy potential is wood biomass. The present tariffs for wood biomass based CHP can however only stimulate investment where biomass is available and when no substantial additional investments in utilization of heat are needed. Higher market prices for wood biomass in the neighbouring Italy and substantially higher feed in tariff for RES-E generated from biomass in neighbouring Austria have been stimulating the export of wood biomass which would be otherwise suitable for power generation in the country. This is the main rationale behind recent (August 2006) correction of the feed in tariff for wood biomass. It is however too early to make any assessment how the change in question – if at all – will influence the generation of electricity from wood in the country.

A number of direct subsidies and indirect instruments (co-financing of project preparation, awareness raising, training and education etc.) have been in place in Slovenia. Till its abolishment at the end of 2004 most of this additional support was provided by AURE RS.

After the introduction of the feed-in tariffs, there have been no additional subsidies available for RES power plants. The availability of soft-loans at the beginning of the 90's spurred a wave of construction of small hydro power plants. In that period interest rates were very high, up to 12 % above inflation, and credits were difficult to obtain. The state owned bank, using also a budgetary subsidy, offered loans to investors at more reasonable rates, typically "inflation + 5 %". Contracts provided investors with a hedge so they could postpone payments under specified conditions.

Presently, subsidies are available for biomass- and solar-heating installations. An internationally sponsored (GEF) programme addresses biomass district heating systems. Subsidies of up to 50 % of the total investment value have been granted to pilot projects. The active scheme includes a 25 % subsidy and 25 % of investment cost as soft loans.

Next to feed in price based priority purchase for electricity from qualified production other direct (subsidies) and in-direct (co-financing of project preparation, awareness raising, training and education etc.) instruments have been in place in Slovenia. Till its abolishment at the end of 2004

most of this additional support was provided through AURE RS, however a detail investigation of both AURE RS and Environmental Fund support would be needed in order to provide exact figures for support to RES-E projects.

Table 3: Subsidies from AURE and foreign donations in support of RES

year	Subsidies of AURE	Foreign donations
	[mio Euro]	
2000	7,08	4,423
2001	8,75	0
2002	5,8	0
2003	18,7	2,8
2004	20,75	13,38

Table 4: Soft loans of Environmental Fond of RS for RES in the period 2001-2004

Year	Number of credits		Amount of credits issued [mio Euro]	
	Legal persons	Natural persons	Legal persons	Natural persons
2001	1	3	0,08	0,01
2002	3	21	0,34	0,14
2003	6	31	0,54	0,21
2004	5	5	3,50	0,05

After the introduction of the feed-in tariffs, there are no subsidies available for RES power plants. Soft-loans were available in the beginning of the 90's, which spurred a wave of construction of small hydro power plants. In that period interest rates were very high, up to 12 % above inflation, and difficult to obtain. The state owned bank offered, using also a budgetary subsidy, loans to investors at more reasonable rates, typically "inflation + 5 %". Also, contracts provided investors with a hedge so they could postpone payments under specified conditions.

Presently, subsidies are available for biomass- and solar-heating installations. An internationally sponsored (GEF) programme is targeting biomass district heating systems. Subsidies of up to 50 % of total investment value have been granted to the pilot projects. The active scheme includes a 25 % subsidy and 25 % of investment cost as soft loans.

Investment subsidies for small biomass-fired boilers (individual housing) are now available.

4. THE NATIONAL POSITION IN THE EU DEBATE ON THE DIRECTIVE 2001/77/EC

As it looks for the time being, Slovenia has neither national position nor a national debate on the directive 2001/77/EC⁸. No reference on the directive 2001/77/EC could be found in the current political discussion of energy strategy and major national energy projects.

Within the activities of national desk we have attempted to start a debate on how to reach the objectives of the directive. We have failed to get any support from the government for the project in general as well as participation of key decision makers in the activities of the national desk. RES-E seems to be a non-issue for key actors of energy policy of the country. Slovenian government is however not denying its RES-E target, accepted in the Accessions agreement. Lacking political will and dedicated resources and facing a fast increasing growth of the electricity consumption, meeting RES-E target becomes a "mission impossible" even if the planned large hydro power plants (> 10 MW) on the Sava river are built in time. Present data (see table below) suggest that the share of RES-E is indeed decreasing and that the trend is bound to continue. It seems that by putting in place feed in support scheme respectively by ongoing activities to adjust it to both EU state aid rules and the CHP directive, the government reached the limits of its RES-E policy support. The supply side oriented policy, based on large conventional plants and a new nuclear power plant, does not spill over to adequate support of RES-E.

Improved support instrument for RES-E, strong political commitment and policy instrumentation for slowing down electric power consumption growth would be needed for meeting the RES-E target.

Table 5: RES-E generation by source and balance of primary energy

	2000	2001	2002	2003	2004	2004/2003	2004/2002	2004/2000
	AVERAGE ANNUAL GROWTH							
RES-E production [GWh]	3.905	3.865	3.415	3.079	4.218	37,0%	11,1%	1,9%
Hydro Power Plants till 10 MW	340	371	327	268	436	62,7%	15,5%	6,4%
Hydro Power Plants above 10 MW	3.495	3.425	2.986	2.690	3.658	36,0%	10,7%	1,1%
Wood and other solid biogas	58	54	84	98	93	-5,1%	5,2%	12,6%
Landfill gas	9	12	16	22	28	27,3%	32,3%	32,8%
Sewage gas	3	3	2	1	3	200,0%	22,5%	1,6%
Brut electric power consum. [GWh]	#####	12.694	#####	13.985	14.492	3,6%	3,7%	4,2%
Share of RES-E [%]	31,7%	30,4%	25,4%	22,0%	29,1%	7,1%	1,9%	-1,3%
Indigenous production [mio toe]	0,760	0,777	0,750	0,723	0,832	15,2%	5,4%	2,3%
Hydro	0,330	0,326	0,285	0,254	0,352	38,4%	11,2%	1,7%
Other RES	0,430	0,450	0,465	0,468	0,480	2,6%	1,7%	2,8%
Total primary energy consum. [mio toe]	6,417	6,701	6,843	6,893	7,126	3,4%	2,0%	2,7%
Share of RES in the total en. consur sump.	11,8%	11,6%	11,0%	10,5%	11,7%	1,2%	0,4%	-0,1%
	2000	2001	2002	2003	2004	2005	2006	2007
Hydro PP till 10 MW	2,8%	2,9%	2,4%	1,9%	3,0%			
Hydro PP above 10 MW	28,4%	27,0%	22,2%	19,2%	25,2%			
Wood and other solid biomass	0,5%	0,4%	0,6%	0,7%	0,6%			
Landfill gas	0,1%	0,1%	0,1%	0,2%	0,2%			
Sewage gas	0,0%	0,0%	0,0%	0,0%	0,0%			
Directive 2001/77/EC	29,9%	29,9%	30,3%	30,8%	31,2%	31,6%	32,1%	32,5%

⁸ Directive 2001/77/EC of the European Parliament and of the Council of 27. september 2001 on the promotion of electricity produced from renewable energy sources in the internal electricity market, OJ L 283, 27.10.2001, pp. 33-40

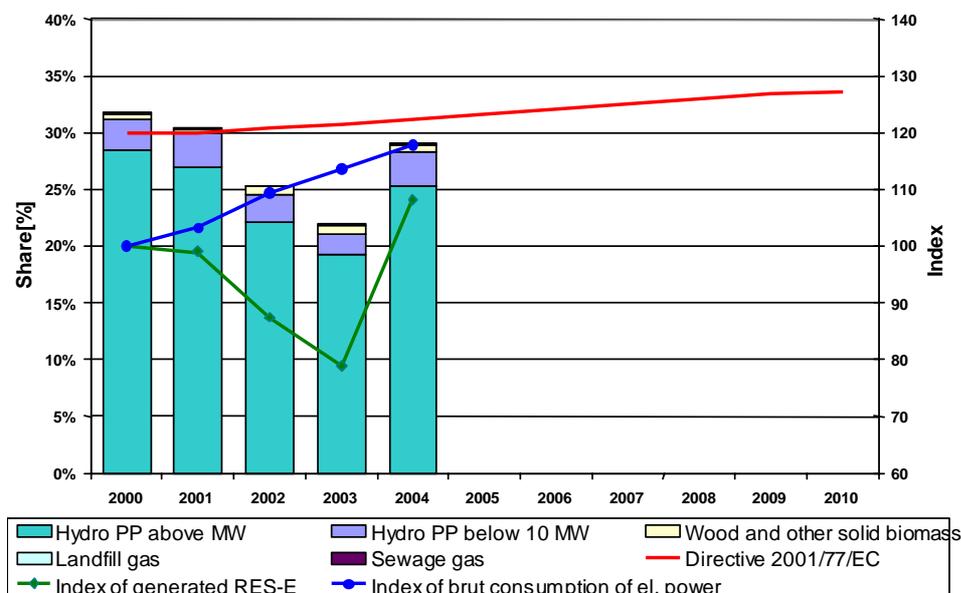


Figure 7: Share of RES-E in gross consumption of electric power in Slovenia

5. STATE OF LIBERALISATION OF THE SLOVENE ELECTRICITY MARKET

Even after 1996, when political decision to join the EU was made and the economy recovered from the shock from loosing substantial markets in former Yugoslavia, the government hesitated to face the challenge of restructuring of electricity, and the whole energy sector. The legal basis for market restructuring was given first in 1999 by a new Energy Act imposed by EU accession process rather than indigenous reform forces. The governments in the transition period used the following set of policies: (a) fight the inflation by direct control of the prices of infrastructure commodities, rather than addressing the structural sources of inflation; (b) placating strong interest and pressure groups as well as important strata of the voters by avoiding energy sector reforms. The result was a “minimum of the minimum” approach to following the EU directives on opening of the electricity and gas markets and taxation of electricity and gas.

5.1. Market concentration

Since July 2001 - when all customer that exceed 41 kW of connected power at one consumption point obtained the right to choose their electricity supplier as eligible customers the market is gradually opening. In the next step, all consumers except households became eligible customers. Last amendments to transposition into the national Energy Act expected in early 2006 will open also the household market to competition, on July 1st 2007. This right has been however significantly hindered by non-market approach in allocation of transmission capacities and by lack of support to new providers/traders of electricity and the practical monopoly of HSE in domestic generation of electricity (see: Table 9). In its Annual Report for 2005 the Energy Agency stated: *“HSE is the dominant company, as its market share significantly exceeds 40 percent (CR1). With respect to the total production, the share of the three largest producers of electricity on the transmission network (CR3) is 96.9 percent, which indicates a very tight oligopoly. The state is the majority owner of these companies”*⁹. The degree of market liberalisation did not exert expected

⁹ Report on the energy sector in Slovenia for 2005, Energy Agency of RS, page: 44.

influence on competition. According to the Energy Agency of RS the number of eligible customers in 2004 did not exceeded 100.000, or 12% of all electricity customers in Slovenia (see also Fig. 8).

Figure 8: Dynamics of liberalisation of electricity market eligible and tariff customers in 2005

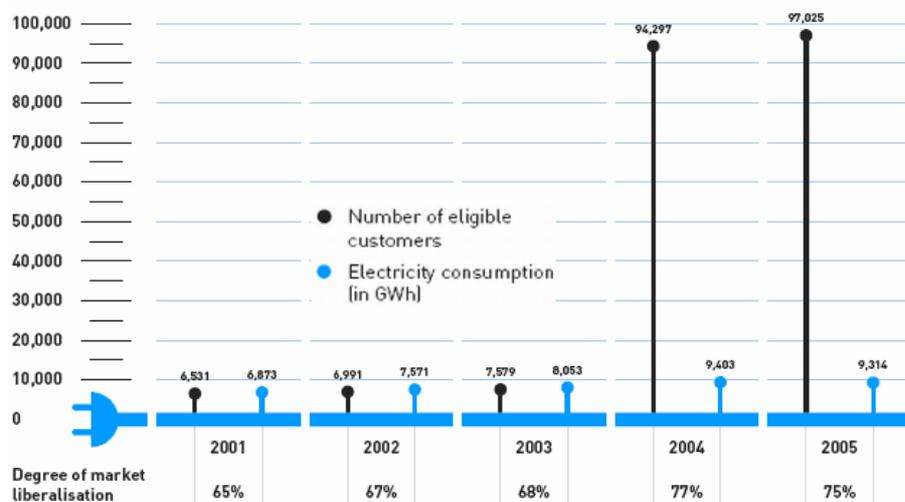
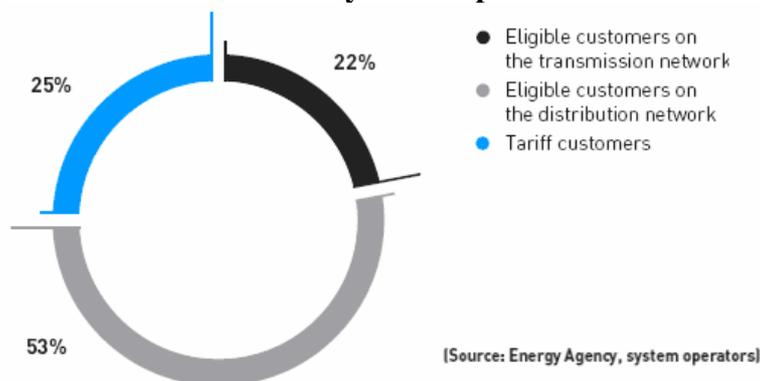


Figure 9: Shares of electricity consumption in Slovenia in the year 2004



The share of eligible customers of electricity was equal to 68,6 % of the total electricity consumption; 8273 GWh were delivered to eligible customers. No major changes with respect to years 2002 and 2003 can be identified. The electricity supply to eligible customers is however highly concentrated. HSE share was equal to 69,6 % of total installed generation capacities respectively to 75,2 % of total installed capacities on distribution grid and around 70% in total generated electricity in the country. The Hirschmann-Herfindahl Index (HHI) of market concentration thus exceeds the value of 1800 that is considered as a margin for high concentration of the market. HSE has a dominant position on the market not only in terms of the share of generated electricity but also on the system services market. In this terms Slovenia is comparable with other EU countries (France, Greece and the Netherlands) with highly centralised electricity sector prior to EU liberalisation. Most trading is based on bilateral contracts. The share trade on the energy exchange (Borzen) was in 2004 only 2,2%, base load trades dominated (78 %) and even that was shrinking. The retail market on the distribution grid demonstrates HHI of 2115 thus showing high market concentration or rather an absolute domination of five predominately state owned distribution companies and HSE. The whole electricity final-use market shows reduced market concentration (HHI 1737), somewhat better than for retail, due to direct access of few large consumers to foreigner suppliers on the transmission grid.

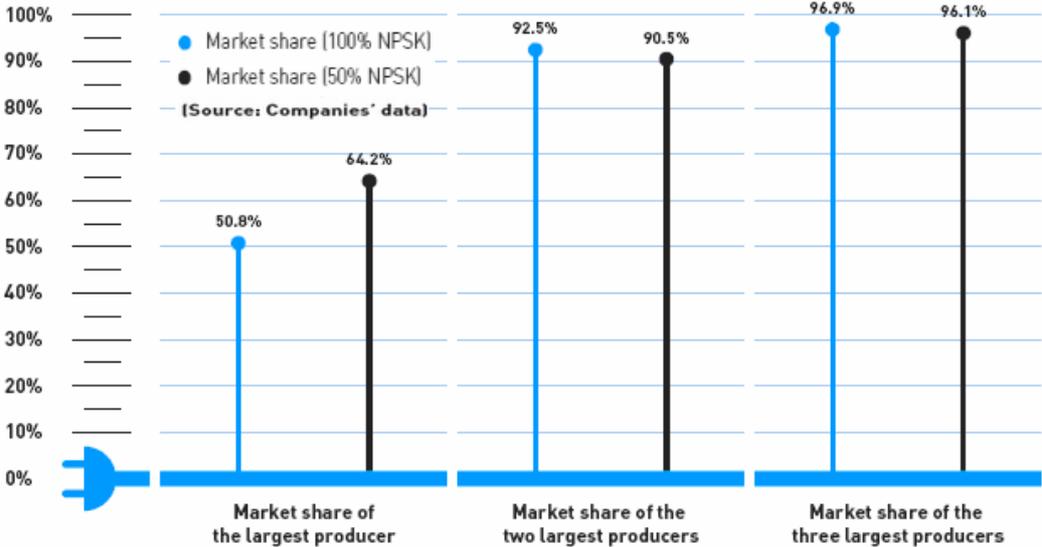
5.2 The privatisation of the electricity sector

Part ownership of power plants and coal mines was the result of the voucher privatisation, but the state retained approximately 80% ownership of each power plant (with a few exceptions). The same is true for the five distribution companies, while the transmission company ELES is 100% owned by the state, as well as the half of the nuclear power plant Krško. The state thus has the upper hand in any power sector decision. Holding of Slovene Power Plants Ltd. (HSE) was established by the government in July of 2001. It is a mother company for more than half of the power plants and is itself in 100 % ownership of the state. Specific membership agreements were imposed on the power plants, so that effectively the whole HSE Ltd. system is controlled by the state-appointed management and supervisory board, of which the chairman is the Minister of Economy. The distribution companies are 80% owned by the state whereas minor share of distribution companies have been distributed to authorised investment funds, employees and parastatal national restitution and pension funds.

5.3. Recent developments

After election in 2004 the new government decided to design and implement macro-economic reforms in order to increase competitiveness of the national economy by restructuring the fiscal and welfare systems as well as – among others - by further market reforms in the energy sector. In order to abolish the supply monopoly of HSE on the domestic market, the government in 2005 decided to form the second domestic supplier based on its 50% share in NPP Krško. Thus in 2005 the Government turned company ELES-GEN – established in 2002 by national transmission company ELES to deal with sales of electricity from Slovene half of the nuclear power plant - into an independent supplier of the electricity from the country’s nuclear capacities. In autumn of 2006 the new company, renamed to GEN-energija (<http://www.avk.si/gen/>) concluded a marketing contract with Istrabenz Gorenje – Energetski sistemi, the country’s largest private electric power trading company¹⁰. In 2007 additional two power companies are to function within the GEN-energija system gas turbine (peaking) power plant Brestanica and Sava river hydro power chain. , whereby it will complement it’s portfolio with more flexible power generation capacities.

Figure 9: Share of largest producers in the electricity market in total Slovenian production



¹⁰ Istrabenz-Gorenje is a daughter company of two private holding companies in which the state has substantial influence through ownership shares and otherwise.

A general privatization plan was adopted by the government for HSE in 2006. The plan is lacking details and has no precise timing. In general, the state is to retain a majority share (50+%) in the whole system, but a strategic partner is to be invited to invest approximately 26% of the total value of the system. It is not clear whether the detailed arrangement will involve shares at the top level and full vertical consolidation of the company, or the fresh capital will be used for specific new projects, such as the TPP Šoštanj 6.

Trade unions resist privatisation involving any strategic foreign partners and proposes a privatisation model based on domestic institutional investors (national pension and restitution funds and authorised investment funds) and private citizens. General public is also opposed to privatization, especially as it may involve selling off the “family silver”, such as the Drava River hydro chain. The outcome of privatisation process is yet to be seen.

6. ROLE OF GREEN POWER IN THE NATIONAL ENERGY POLICY

Legally, a market for electricity from qualified producers generated with capacity up to 1 MW was established by the Energy Act of 1999. A clause stipulated free trading of such electricity to any customer, including households, at minimal grid tariffs. In practical terms this provision was blocked first by lack of consistent political will, and specifically by lack of practical rules on access to the grid and charges for system services. Instead of becoming a strong instrument for development of local RES-E solution, this remains a strictly niche market for pioneers.

All mid and large sized RES-E capacities in Slovenia are owned and operated by the national electricity generation holding company HSE Ltd. and are RECS certified. HSE Ltd. is trading both green certificates on the international market as well as the product Modra energija (Blue energy) on the domestic market (in partnership with all five electricity distribution companies) whereas no effective control against eventual double accounting has been implemented yet. Next to HSE Ltd. the “green electricity” – predominantly from small private HPPs - is traded also by a private company, Ekowatt Ltd. (“Zelena elektrika”) based on their own certification model and by the largest distribution company in the country Elektro Ljubljana that is offering non-certified RES-E from its own small HPPs to all costumers at additional price of 4.1 Euro/MWh. Although still being a niche market, the “green electricity” market is showing considerable dynamics. However it is largely dominated by HSE Ltd. And its brand “Modra energija”.

6.1. RES-E within the Resolution on the National Energy Program

The Resolution on the National Energy Program, adopted by Slovene parliament in the spring of 2004, is setting following goals in the field of RES:

- **Increase of share of renewable energy in primary energy** from 8.8% (in the year 2001) to 12% till the year of 2010. This goal is in line with European Commission's White book on energy.
- **Increase of share of electricity generated from renewable sources** in order to reach the share of 33.6% gross consumption of electricity from renewable sources till the year of 2010. This objective is in accordance with EU Directive 2001/77/ES and has been integrated in the accession treaty to European Union. In the year of 2000 this share was 29.9%.
- **Share of bio-fuels** in the total energy value of transport fuels should reached 2% in the year of 2005 and 5.57% in the year of 2010. These goals are in concordance with the Directive

2003/30/ES and in 2005 also got a national legal framework. In the year of 2005 however the target was far from being met.

The goals are harmonized with respective EU goals and directives in the field of RES and RES-E. A target to increase the share of RES in total heat supply from 22 % in the year 2002 to 25% in the year 2010 has been set. In order to reach these goals the following instruments are mentioned:

- guaranteed purchase, priority dispatching and feed-in price for all RES-E that fulfils criteria of qualified generation of electricity;
- tax deductions (for bio-fuels),
- financial support (subsidies) to research activities, pilot and demonstration projects, and development of local energy concepts and (pre)feasibility studies, awareness raising, education and training activities etc.

For support of RES-E in particular the following additional support measures are mentioned:

- analysis of potentials and preparation of development strategy for each single renewable source in the country,
- achievement of mid-term stability of purchase prices,
- tendering for new generation capacities,
- introduction of a certification schemes,
- standardized procedure for accession to the grid for micro and small PP to enabling household consumers to voluntary purchase electricity from qualified production on the basis of minimal/reduced grid tariff,
- information and awareness raising programs on RES-E and qualified generation of electricity.

Main criticism can be addressed to a lack of well selected and prioritised goals as well as precisely defined responsibilities and resources for their implementation. In particular the Resolution is neither setting the reduction of country's high energy intensity nor is it exposing slow down of high rate of increase of consumption as top priorities for orienting the energy sector toward sustainability. Rather than a coherent policy document of energy sustainability it should be considered as compendium of "wishful thinking" without clearly defined priorities on the one side and relations between goals, instruments, responsibilities and resources on the other.

A case in point is the ups and downs of the proposed and real fiscal allocation. The proposal sent by the government to the Parliament in March of 2004, the necessary for achieving the proposed goals was budgetary spending for RES and RUE to an average of 7 billion SIT per year till 2007 (approx. 292 million EUR). In session, the Parliament almost unanimously accepted an initiative of its Environmental Protection Council – a consultative body representing environmental community – and doubled the envisaged amount to 14 billion SIT. One of the arguments was that budget income in excess of that sum is collected from CO₂ tax alone and that these funds should be earmarked to support CO₂ friendly solutions in the energy sector. Actual budget allocations for support to RES and RUE in the following years and also for 2007 remains at approx. 1 billion SIT (42 million EUR) per year, or 14 times lower.

As for the political and economic support to individual projects, it is much stronger for specific projects where state owned traditional actors are involved than for other actors. A case in point is the investment in hydro power plants chain on lower Sava river basin where the Ministry of Environment is financing all necessary environmental protection and improvements needed in municipalities involved. Strong political support at the government and parliament level also exists for the wind project of the 80% state owned Elektro Primorska distribution company, defying nature (birdlife) protection interest of the nation. A clear continuity exists with what was known as "agreement economy", in which the state and high-level political interests teamed with the industrial interest against economic logic and environmental responsibility.

7. STAKEHOLDERS POSITIONS ON PRESENT RES-E SUPPORT SCHEME AND THE FUTURE OF RES-E POLICY

The work of the Slovenian national desk concentrated on in-depth interviews and intensive consultation with various stakeholder groups. Following the initial national hearing in May 2005 with representatives from producers and traders of green electricity, the regulator, independent consultants working in the RES field and non-governmental organisations, topical meetings were organised. The core activities of the Slovenia Desk focused on discussions and workshops with key target groups, e.g. RES-E generators from biogas and wood biomass and nature protection NGOs. Three national desk workshops with the representatives of these different groups were organised in November and December 2005 whereas individual in-depth interviews followed in spring of 2006. Within the 2nd international conference of REALISE Forum in Maribor in May of 2006 a national consultation on RES-E potential of the various RES-E technologies took place. Based on above mentioned activities preliminary findings, conclusions and recommendations were distributed to the stakeholders in the beginning of September of 2006 and together with presentation of the draft of the new feed in scheme discussed on the final national hearing, held in Ljubljana on September 20, 2006.

The discussions at the three meetings proved that compared with other energy policy matters, the choice of the support scheme is not perceived as a major issue. No significant interest was detected among stakeholders for tradable certificate and quota. Feed in tariffs on the other hand are seen as one of the few stable parameters in otherwise unstable and (over)complex investment framework for RES-E. Next to discussing differentiation of the tariff support scheme, the participants focussed on issues concerning the administrative framework and public acceptance of RES. General energy policy themes were also addressed, especially issues concerning energy efficiency as a general precondition to any new investment in RES-E. The main obstacles for a balanced, consensus oriented dialogue on RES were identified and discussed. These are: non-coordinated and opposing goals of different governmental sectors; unwillingness or lack of capacities for public participation; lack of support to marginal stakeholders; misuse of the monopoly position of the state owned energy supply industry; and lack of clear and prioritised goals and objectives of the national energy policy.

In the consultation process, the NGOs drafted a general position paper on RES. The planned criteria for “gold RES-E standard” that would fit to Slovene circumstances and would include procedures and criteria for increasing the acceptance of RES-E policy and projects remained a draft that should be improved in discussions with the government and business actors.

So far the NGO community managed to compensate its weakness in RES-E policy arena by shifting the conflicts into media arena - where its image politics of “David fighting the Goliath” have till now proved to be successful – and in more recent time also in legal-administrative arena both on national and on EU levels. In general environmental, nature and landscape protection NGO community is too weak to aggregate their interests and can only relay on “ad hoc” irregular support that is only partially and by exception overlapping with dynamics of the policy process. Even in case of an opened policy approach and a positive attitude of NGO actors to participate in discussing new solutions in support to RES-E, NGOs lack support framework for taking part in strategic dialogue on RES-E policy. Obtaining a status of public servicing NGOs, access to information and access to status of “party in a procedure” issues are (still) defining main concerns and agenda of majority of environmental/nature protection NGOs in the country.

Therefore, after foreign embassy based support to participate in the project terminated in February 2006 NGO participation in the project as well as in RES-E policy in general substantially decreased. Attempts to provide financial support from the government and the business sector to

assure further NGO participation have failed whereas nature protection NGOs have been over engaged with their advocacy mission within present conflicts on certain proposed or planned large scale RES-E projects to engage in long term strategic issues.

In January 2006 questionnaires were designed and distributed to the stakeholders of the national desk to provide insight of their attitudes, statements and expectations on RES-E policy in general and to support instruments for RES-E in particular. Questionnaires were tailored for each of the three specific target groups: the RES-E producers, RES-E experts and environmental/nature protection NGOs. The questionnaires were structured to get a precise profile of the addressed institutions/organisations, their knowledge of energy and environmental issues related to energy sector, attitude to RES-E, opening of the electricity market, role of the market regulator, marketing of RES-E and support to RES-E in Slovenia, as well as attitudes regarding climate protection, nature protection and institutional design of environmental impact assessment in Slovenia. In addition, all three types of questionnaires addressed expectations of the future support instruments/schemes for RES-E and developments of RES-E market in Slovenia taking into account the trends in the EU. Since the feed back was low, it was decided to concentrate the national desk activities on individual consultations and direct interviews with stakeholders. Altogether 11 in-depth interviews with at least two representatives of each national desk constituency group were carried out from March till May of 2006.

Findings and conclusions from the interviews are:

- a) A large majority of stakeholders is considering the actual feed in system in Slovenia as compatible with a liberalised market of electric power. A large majority of interviewed stakeholders has few or no knowledge on quota/tradable certificate RES-E schemes. However they all agree that taking into account the size of the market and limited number of market actors, any national quota/tradable certificate scheme is not feasible, if not for other then for the reason of very low liquidity that could be achieved on such a market.
- b) Majority of (potential) investors considers the level of feed in tariff/premium as too low, especially taking into account huge administrative barriers and technical procedures constrains for investments and operation of a new RES-E generation capacities. Under the current feed in the scheme especially too low tariffs/premiums for RES-E generated from wood biomass and from PV installations above 36 kV have been pointed out (both was in August 2006 corrected by a change of corresponding governmental decree).
- c) With respect to the assessment of the opening of the electricity market in Slovenia the perception and evaluation seems to be very much influenced by the position of the stakeholders thus differences between them seem to be quite large. While the stakeholders that are part of the state owned or public utilities consider market opening substantial and access to the market as opened as possible, private stakeholders are not sharing those statements and are claiming that there are many technical rules and procedures that indeed hinder the access of small producers to the market.
- d) Increased electricity prices in the recent year as well as increased demand for “green electricity” resulted in “pooling of small scale RES-E supply” by one of the main traders with electricity in Slovenia Istrabenz-Gorenje – Prodaja električne energije Ltd.”. This is offering an interesting example of combining RES-E feed in premium scheme with the demand side market pull based on the increased awareness of electricity consumers. However it is too early to assess its real scope and results.

- e) While all investors are claiming spatial planning and environmental impact assessment procedures as large barriers for dissemination of the new RES-E generation capacities especially small scale private investors are claiming that the burden of time consuming non-integrated and sometimes even contradictory procedures can jeopardise their very existence. An integrated policy and support for reducing administrative barriers is demanded as urgent in the views of (potential) investors.
- f) After the increase of feed in/premium for RES-E in 2004 the interest for investments in the RES-E increased considerably especially for biogas CHP and PV installations. Harmonization of legislation in the area of agriculture and treatment of animal residuals that are not intended for human nutrition and bio-degradable wastes as well as removal of all import duties for goods imported from the EU after accession in 2004 contributed positively to the RES-E investment climate in the country. Nevertheless many projects have been delayed or even cancelled due to uncertainties and high costs of complying with all required administrative and technical requirements.
- g) According to statements of most stakeholders, considerable lobbying and bargaining both at local and the national level are needed to push RES-E projects through administrative procedures. These are of course costs that are undermining small-scale projects and the project of the newcomers that have not (yet) the access to arenas of bargaining or have too little to offer within the bargaining process.
- h) Taking into account high growth of electricity consumption in the country in the recent years (about 4% per year) and administrative and technical restrictions for the new RES-E investment, none of the interviewed stakeholders believes that Slovenia can meet its indicative RES-E production target despite the ongoing (but slowed) construction of the new hydro power chain on the lower Sava river and a weak revival of other RES-E investments.
- i) NGO representatives claim that excessive growth of electricity consumption (above the growth of GDP) is undermining any attempts of “greening” the electricity sector by new RES-E capacities even if they were not situated in the areas sensitive in terms of nature and landscape protection. Thus in their opinion, decrease of energy intensity and increase of energy efficiency should have priority over support to the RES-E generation in the country. This statement can be attributed to the environmental NGOs in general and not only to nature/landscape protection organizations or civil initiatives against large RES-E installations that are planned in sensitive areas.
- j) NGOs criticize the weak support of the state to deal with energy or electric power policy and weak capacities in dealing with general issues of greening the energy sector and support the RES-E. They also express high level of concern about the impartiality of state agencies and high political representatives, especially when the investments in the RES-E generation by state or para-state owned companies are at stake. State and municipal authorities are also mistrusted to be willing or capable to assure a level playing field in the case of the conflict on siting of the RES-E installations. Nature/landscape protection NGOs are in favour of higher level of feed-in support but would at the same time demand more restrictive spatial planning procedures, better access to information and participation in environmental protection procedures and, last but not least, also effective and efficient sanctions against violation of the nature/landscape protection principles.
- k) When the investment in the new RES-E generation will predominately be carried out by existing parastatals, while the key national projects are fossil and nuclear capacities, this

will most probably undermine the image of the RES-E as a carrier of social innovation and greening of the electricity sector. This can on the other side undermine dynamics of growth of different RES-E based products on the electricity market.

Above mentioned findings and conclusions were distributed in the beginning of September of 2006 to national desk members. They were presented, discussed and confirmed on the final national hearing on September 20 2006 in Ljubljana.

8. OBSTACLES FOR RENEWABLES

Public awareness and promotion: Renewable energy sources are featured in the press mostly in positive terms. This in part reflect the positive official position towards renewable energy sources. Occasionally renewable energy sources have a less favourable reception. Examples are some small hydro power plants, built in nature-protection areas or in a makeshift manner. There were cases of local opposition to wood-burning installations (district heating boilers) on claims of excessive pollution. Considerable opposition is mounting against large wind farms, recently also against HPP on Mura river and mid stream of Sava river.

Market position: Whereas international energy prices are a positive factor, economic arrangements in Slovenia are not favourable for the utilisation of renewable energy sources. Average prices of fuels are still low. In the electricity sector, many details favour incumbent utilities and large fossil and/or nuclear power plants. Coal-fired power plants in Slovenia have production costs between 12 and 17 SIT/kWh (55 to 75 €/MWh) for intermediate service (still mostly base-load), so they survive through diverse subsidies. Examples of subtle subsidies to central power plants include socialisation of reserve capacity in network charges and application of the "gross" method for transmission network cost allocation. The feed-in-tariff for RES and quality CHP only partially compensate such disadvantages.

Lack of internalisation of environmental, social and security-of-supply externalities, e.g. by adequate taxation of fuels, maintain RES heating at an unfavourable position.

Specific barriers: Barriers are not different from those in other countries. Less favourable conditions for RES are rooted in historical conditions, when new sources (oil, gas, nuclear) were considered more modern and future-oriented. Central power generation was also promoted at the expense of local resources. Some excess capacity for electricity generation still exists in the country as well as in the region.

Negative driving forces are sustained by a strong political position of the power sector and the fuel supply companies and weak quality development interests.

The state owns the power sector. This hinders resolution of main issues, such as closure of obsolete capacity and reduction of coal mining. The government is also fostering privatisation plans. Under these conditions, weakening the market position of existing assets may decrease their sales value.

Development of RES electricity production in Slovenia will encounter some opposition from local environmental interests. The first wave of small-hydro construction in the 1990's has produced a few negative examples, besides many positive ones. Some small hydro plants were less successfully integrated into the environment. Sloppy construction practices fuelled opposition. A socio-political reason for opposition to small hydro power plants is also that they are predominantly owned by individuals or small owner-groups. Better acceptance would be achieved

by community or dispersed ownership, but on the other hand co-operative attitude is rare in Slovenia.

Early development efforts for wind energy utilisation bear negative public acceptance potential. Developers of all sites in the Primorska region, where best, but still marginal economic potential is identified (irregular "bora" type winds), are the local distribution utility, Elektro Primorska and a Spanish company (EHN). They have good official connections (EP being state owned). The whole Primorska region has been declared in national siting plans as suitable for wind power production. Several potential hill-ridge wind parks with capacities from 30 to 90 MW (20 to 60 turbines) have been identified in a proprietary siting study. For nature conservationists, most of these sites are considered as unique natural habitats that should be protected from intrusions. During 2003 the struggle gained momentum and is continuing to the present time (early 2007). Project developers have gained local support by offering local communities and individuals material bonuses, such as purchase of low value land, and promises in terms of rent and employment opportunities. On their side, nature conservationists are well presenting their case in the media. Besides environmental arguments, they bring up profiteering and technical issues, such as poor quality of electricity produced, a need for reserve power and even allegations of negative life-cycle energy balance. Public attitude towards electric utilities is generally negative, due to poor transparency of operation and even scandals. The setting; state-owned and foreign utilities against nature conservation civil society groups may harm public support to RES development.

Fundamental issues of the energy policy also remain unresolved even in principle, such as the desired decrease of the high energy intensity. Lack of a clear policy, divorced from utility interests, may produce damaging moves for RES, such as coercing the public with acceptance of unwieldy hydro projects or large wind farms, whereas at the same time increases of consumption remain unchecked (a new aluminium smelter started operation in 2003!), and uneconomical, polluting coal-fired capacity is supported. In an atmosphere on the tune of: "all capacities that can be built will not be enough", RES-E is not promoted as a substitute for more polluting sources. So RES-E is justifiably perceived as an add-on burden on the environment.

9. LESSONS FROM REALISE FORUM NATIONAL DESK ACTIVITIES

In order to achieve goals and objectives in the field of RES and RES-E in Slovenia several support measures need to be adopted. Firstly, »fine-tuning« and increase of feed in tariffs for most of the RES is needed, taking into account also market prices and feed in tariffs in neighbouring (EU) countries. Next, efforts should be made to remove administrative barriers and improve social acceptance of RES and RES-E. Last but not least, a coherent overall energy policy is needed, to include both RES and efficient use of energy and to renounce increased energy consumption as a sign or stimulus of national progress.

“Feed in tariffs” and guaranteed sales of electricity are among the few stable conditions that contribute to (financial) feasibility of RES-E projects and are also of the key importance for access to bank credits for small investors. The latter are still excessively burdened by uncertainties and high transaction costs of administrative requirements for RES-E investments.

More stringent environmental protection and spatial planning rules are double faced. Whereas small project can easily be killed by the approval process, large, state-supported projects may be seen as privileged by the political and administrative apparatus.

Environmental NGOs fear that fulfilling of national objectives in the field of RES-E in situation of high-rate growth of total consumption of electricity, compounded by restricted access to public participation, lack of good practices of public participation and increased interest of (foreign) investors is leading toward increased threats for biodiversity and violation of the EU directives and other international obligations in the field of biodiversity. NGOs themselves feel as endangered species, as their role in the society remains uncertain, compounded by a new and poorly defined process of achieving the status of organizations acting in public interest. Various forms of public participation, such as even parliamentary inquiries, have been misused by holders of political power in support to investors.

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