



Sustainability Report
of the **GEN** Group 2013

Sustainability Report
of the GEN Group 2013



ENERGY TODAY – FOR TOMORROW.

Where do we get it from?

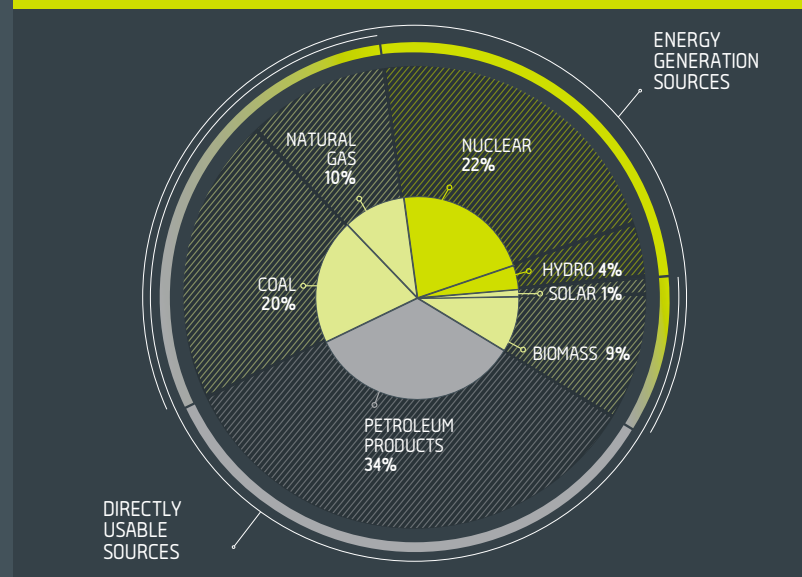
Where do we get the **energy** we need to stay pleasantly warm or cool at home and at work, to be mobile, to power manufacturing processes and run various electrical and electronic devices?

In Slovenia we get it from various **primary energy sources**. Some of them, typically nuclear energy, coal and hydropower, we use to generate **electricity and heat**, while others (mainly oil and petroleum products) we use directly.

Today electricity accounts for slightly less than one-quarter of the final energy consumption (17 kWh out of 81 kWh per day per person).

Electricity consumption shares vary widely among various sectors: households, transportation, industry, and services. Nearly one-half of the electricity we generate is used by the industry (47%), and the remaining two-quarters or so by the service sector, which comprises the public sector and some economic activities, and households. In contrast, transportation in Slovenia is completely unelectrified: today nearly 98% of transportation energy needs are met using petroleum products.*

PRIMARY ENERGY SOURCES IN SLOVENIA**



* To learn more about the shares of energy used by Slovenia's households, transportation, industry and service sector, see the Annual Report of the GEN Group for 2013.

** The nuclear share comprises NEK's total production output, one-half of which is available to the Republic of Slovenia and the other half to the Republic of Croatia under the Intergovernmental Agreement.

Going forward: which energy sources are going to drive the future of energy in Slovenia in the period until 2050 and beyond?

As an energy product, electricity has numerous advantages: it can be transmitted over long distances without major losses and then converted into various forms of energy, say, heat, light, and kinetic energy. A sensible strategic move in energy terms for Slovenia to make is therefore to **switch to a more widespread use of domestically produced, clean electricity**, which has the potential to gradually replace the energy generated from imported, high-carbon fossil fuels, especially for **transportation and heating**.

With regard to the future of energy in Slovenia, the GEN Group has its eyes firmly fixed on increasing the share of electricity generated **from sustainable and renewable sources**. These are first and foremost **nuclear energy and hydropower**, which already are important production sources for our Group. Also, taking into account our country's natural assets, we recognize the potential of harnessing **woody biomass** as a source of energy.



Contents

Introduction	12
1.1 About the GEN Group and the company GEN	13
<i>About the GEN Group</i>	13
<i>Organizational structure of the GEN Group</i>	14
<i>General information on the company GEN</i>	15
<i>Governance and bodies of the company GEN</i>	15
<i>Holding activities of the company GEN</i>	16
1.2 Letter from the Director	17
1.3 GEN and sustainable development	19
1.4 Report's compliance with GRI guidelines	20
1.5 Main highlights of 2013	22
Main topics	26
2.1 Portfolio of sustainable and renewable energy: 99.8 percent	27
2.2 Efficient operation: NEK reached nearly 95% of its electricity generation target, the GEN Group 97%	30
2.3 Investments in renewable energy sources: EUR 3.1 million	36
<i>Hydropower – key projects and investments</i>	36
<i>Solar energy</i>	38
2.4 JEK 2 project: technical bases and studies ready	40
<i>Strategic framework and stages of the project</i>	41
<i>Current status of the project</i>	42
<i>Activities in 2013</i>	43
<i>Activities planned for 2014</i>	43
2.5 Promoting the knowledge of energy and the energy industry	47
<i>The World of Energy: 7400+ visitors</i>	47
<i>“The Young in the World of Energy” project: successfully completed nationwide contest and regional competition “Young Wizards!”</i>	48
<i>Supporting industry, business and educational events and projects</i>	49
<i>eWorld: energy supply and energy future explained on the World Wide Web</i>	50

Published by:
GEN energija d.o.o.
Vrbina 17, 8270 Krško

Conceptual design and texts:
GEN energija d.o.o.
and Consensus d.o.o.

Creative design, layout and
production:
KOFEIN

Photography:
Mare Mutič, Borut Peterlin,
Miloš Radosavljevič,
GEN Group photo library

Photographs were taken near
Krško Nuclear Power Plant, at
Medvode Hydroelectric Power
Plant, and around Valburga.

Circulation:
150 printed, 150 flash drives

Krško, June 2014

2.6	Knowledgeable people: 1 103 employees, more than half with at least a higher education qualification	51
	<i>Number and qualification structure of employees</i>	51
	<i>Systematic professional training</i>	53
	<i>Scholarships – investment in the development of future human resources</i>	55
2.7	Quality policy and ensuring nuclear safety	56
	<i>Importance of gaining and promoting knowledge</i>	56
	<i>Top priority: nuclear safety</i>	56
	<i>Quality management system</i>	57
	<i>Oversight and ongoing quality and safety improvements</i>	57
	<i>Certification: environmental management and occupational health and safety in the GEN Group companies</i>	57

Key performance indicators **64**

3.1	Business results	65
3.2	Production of electricity	66
3.3	Electricity trading and sales	67
3.4	Capital expenditures and investments, R&D	68
3.5	Employees and development of human resources in the GEN Group companies	69

	Acronyms and abbreviations	70
--	----------------------------	----

Index of tables

Table 1.1	Report's compliance with GRI G3.1 and GRI RS & EUSS guidelines	21
Table 2.1	The electricity production portfolio of the GEN Group relies primarily on sustainable and renewable energy sources (data for 2013)	27
Table 2.2	GEN's performance – electricity production target and results of the GEN Group for 2011, 2012 and 2013 (GWh)	30
Table 2.3	NEK electricity production (GWh) in 2013	32
Table 2.4	SEL large HPP electricity production (GWh) in 2013	34
Table 2.5	HESS electricity production (GWh) in 2013	34
Table 2.6	SEL small-scale hydroelectric power plants electricity production (GWh) in 2013	38
Table 2.7	Overview of small-scale and micro (up to 50 kW) photovoltaic power plants by GEN Group company (installed capacity, electricity output in 2013, output targets for 2013)	38
Table 2.8	An overview of industry events and projects that received our organizational, expert or financial support in 2013	49
Table 2.9	Number of employees in the GEN Group companies as at 31/12/2013 by level of qualification	52
Table 2.10	Number of employees in the GEN Group companies: comparison of 2012 against 2013 (as at 31/12 for both years) and plan for 2014	52
Table 2.11	Number of scholarship recipients in GEN Group companies as at 31/12/2013	55
Table 2.12	Overview of activities in the areas of environmental management and occupational health and safety in 2012 and plans for 2014	58
Table 3.1	Business results of the GEN Group	65
Table 3.2	Electricity production targets and results in GWh	66
Table 3.3	Produced electricity available to the GEN Group	66
Table 3.4	Electricity purchased and sold (GWh)	67
Table 3.5	Capital expenditures and investments, R&D of the GEN Group companies (in EUR million)	68
Table 3.6	Number of employees in the GEN Group companies	69
Table 3.7	Structure of employees of the GEN Group companies by level of education	69
Table 3.8	Number of scholarship recipients in the GEN Group companies	69

Index of figures

Figure 1.1	Diagram of the GEN Group's core business functions	13
Figure 1.2	Organizational structure of the GEN Group as at 31/12/2013	14
Figure 2.1	Structure of electricity production sources in Slovenia in 2013	28
Figure 2.2	Structure of electricity production sources in the GEN Group in 2011, 2012 and 2013	28
Figure 2.3	Comparison of CO ₂ emissions per kWh generated in 2013 (average values for the years 2010–2013)	29
Figure 2.4	Electricity production units of the GEN Group	35
Figure 2.5	Number of RES and CHP producers in Slovenia	39
Figure 2.6	Purchased electricity from RES and CHP	39
Figure 2.7	Timeline of the JEK 2 project	42
Figure 2.8	Composition of visitors to the World of Energy in 2013	47
Figure 2.9	Qualification level: Doctors of Science	53
Figure 2.10	Qualification level: Masters of Science	53
Figure 2.11	Qualification level: Bachelors of Science/Arts	53
Figure 2.12	Pillars of GEN's sustainable development	56



NUCLEAR ENERGY

Reliable, competitive and low carbon

SHARE OF
NUCLEAR
ENERGY
AS A PRIMARY
ENERGY SOURCE:

22%

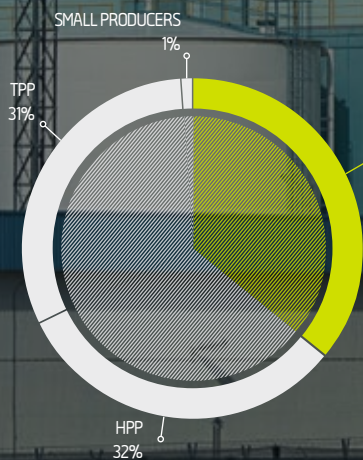
36% of all electricity generated in Slovenia in 2013 came from **nuclear energy** (NEK), while nuclear as a primary source made up **22%**. Half of it went to the Republic of Slovenia, the other half to the Republic of Croatia, which holds a half interest in the power plant.

Nuclear energy ensures a **reliable energy supply at competitive prices**. With NEK's 30+ years of stable and safe operation, we have an **impeccable track record** in harnessing this **low-carbon** energy source.

In the GEN Group we fully recognize the benefits of nuclear energy and seek to expand the country's nuclear production capacity. Our central development project of strategic importance is **JEK 2** – construction of a second unit of Krško Nuclear Power Plant. The project will provide Slovenia with a reliable and competitively priced energy supply and is, at the same time, the best possible answer to meeting environmental protection requirements and standards, including **cutting down greenhouse gas emissions**.

The JEK 2 project could increase the country's nuclear electricity output from 2,518 GWh, the share of nuclear electricity that was available to Slovenia in 2013, to **more than 6,500 GWh per year**. This way, we ourselves would generate enough clean and low-carbon nuclear energy **to meet some of the additional demand for electricity used for transportation and heating**.

ELECTRICITY GENERATION IN SLOVENIA IN 2013 BY ENERGY SOURCE



NUCLEAR SHARE
IN SLOVENIA'S
ELECTRICITY SUPPLY
IN 2013:

36%

With its high, **696 MW** nominal capacity, **NEK** (in the photo) plays a crucial part in Slovenia's electric power grid. It maintains **grid stability and voltage quality** in energy transmission.

JEK 2, the planned second unit of Krško Nuclear Power Plant, will add to the stability of the country's power grid and annually generate **between 8,000 and 12,000 GWh** of competitively priced, low-carbon electricity of domestic origin.



NUCLEAR SHARE IN
PRIMARY ENERGY
SOURCES
TODAY

PROJECTED GROWTH
TOMORROW



Introduction

1.1 About the GEN Group and the company GEN

ABOUT THE GEN GROUP

The mission shared by all the GEN Group companies is to provide a reliable, safe and competitive electricity supply to various consumer profiles.

The GEN Group companies annually produce between 5,600 and 6,300 gigawatt-hours (GWh) of electricity, which makes up 40–45% of the total demand for electricity in the national electric power grid of the Republic of Slovenia.

Giving the freedom of choice. This way we add our share to increasing competitiveness in Slovenia's electricity market and to strengthening the entire national economy.

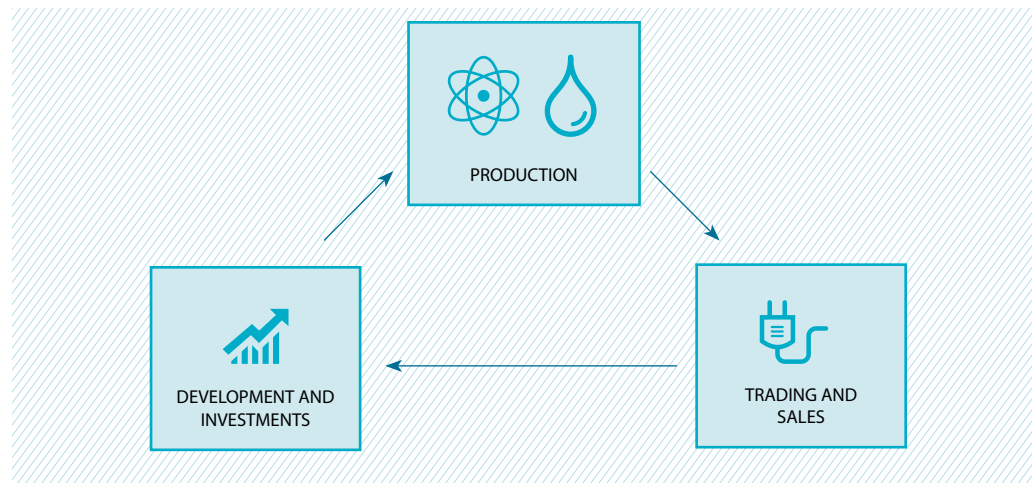
A reliable producer of electricity. We achieve synergies by harnessing various sustainable, zero-carbon energy sources, predominantly:

- nuclear power,
- hydropower, and
- solar power.

Efficient electricity trader. We rely on our knowledge, professional approach and creative energy. We boast an effective array of functions for effective management of risks associated with electricity purchases, trading and sales. Thanks to a guaranteed provision of power and electricity, we give the Group's production sources access to reliable and steady income, while the parent company sees to the optimal sale of power and electricity all the way to consumers. Consumers receive a quality service in the form of a comprehensive supply of electricity and get access to optimized purchase channels.

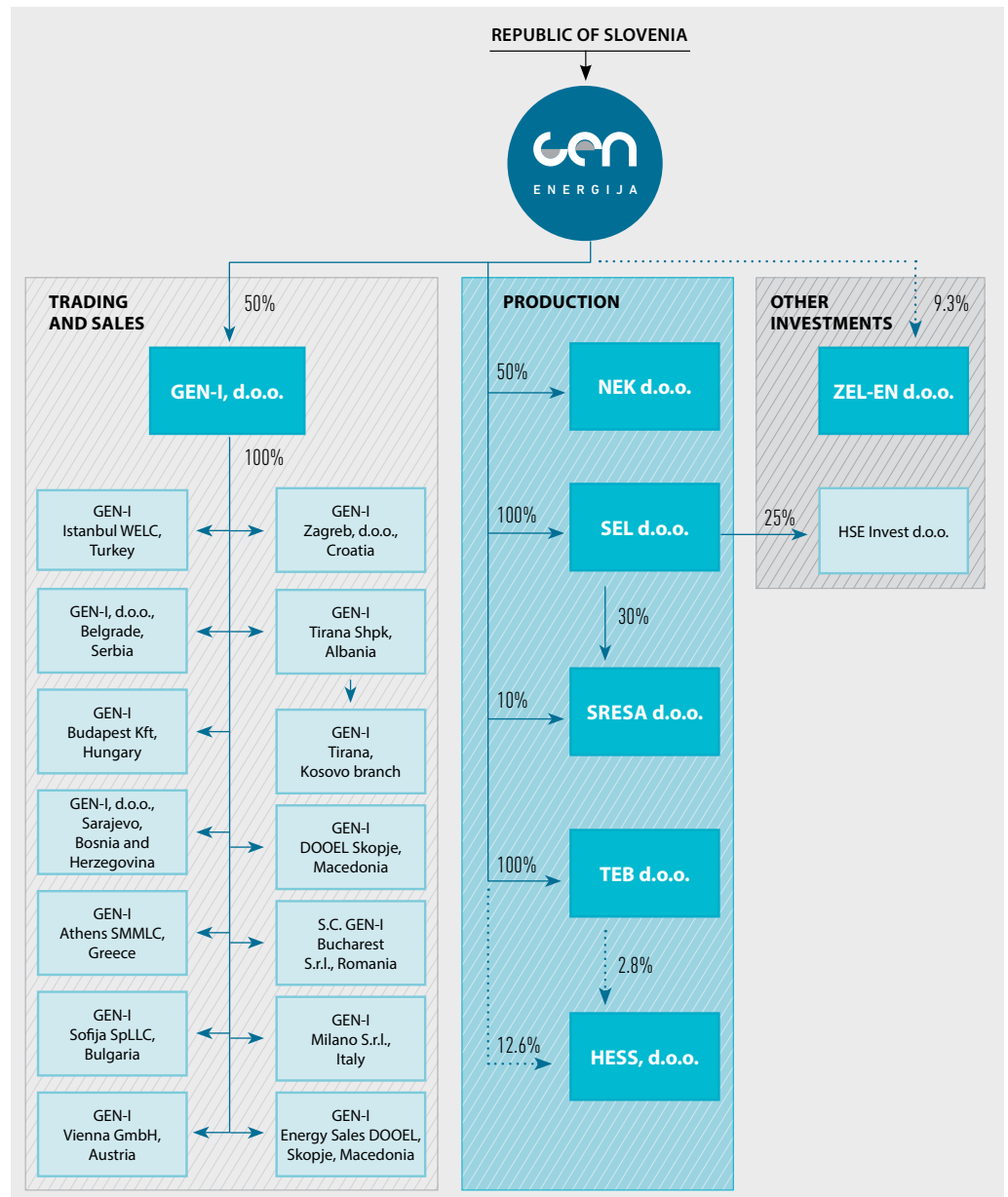
Investment in the maintenance and optimization of existing, as well as the development of new, production facilities is an important strategic focus of the GEN Group. This is the only way we can provide enough electricity to help reduce Slovenia's dependence on imported energy. Co-investing in various new energy projects presents both a challenge and an opportunity for the members of the Group.

Figure 1.1 Diagram of the GEN Group's core business functions



ORGANIZATIONAL STRUCTURE OF THE GEN GROUP

Figure 1.2 Organizational structure of the GEN Group as at 31/12/2013



GENERAL INFORMATION ON THE COMPANY GEN

Registered name:	GEN energija d.o.o.
Short registered name:	GEN d.o.o.
Type of entity:	limited liability company
Registered office:	Vrbina 17, 8270 Krško
Telephone:	+386 7 49 10 112
Fax:	+386 7 49 01 118
Website:	www.gen-energija.si
E-mail:	info@gen-energija.si
Year of foundation:	2001
Founder and sole partner:	Republic of Slovenia
VAT ID number:	SI44454686
Registration number:	1646613
Bank accounts:	NLB 02924-0090457150 Banka Celje 06000-0904571665 SKB banka 03155-1000503323
Activity:	K/64.200 Activities of holding companies, D/35.140 Electricity trading, and other registered activities.
Share capital:	EUR 26,059,796.00
CEO - director:	Martin Novšak
Chairman of the Supervisory Board:	Matej Pirc
Number of employees:	51

GOVERNANCE AND BODIES OF THE COMPANY GEN

Pursuant to the Articles of Incorporation of the limited liability company GEN energija d.o.o., the company is managed by the founder (the Republic of Slovenia) directly and through the company bodies: Supervisory Board and CEO - director.

The company is headed by the CEO - director, who is appointed and removed by the Supervisory Board. After the term of five years, the CEO - director may be reappointed.

The company has a Supervisory Board, which is made up of five members, who are appointed by the founder for a term of four years and can be reappointed after the term expires.

CEO - DIRECTOR:

Martin Novšak

SUPERVISORY BOARD:

From 29/11/2012 until 21/03/2013:

- Chairman:
Martin Bratanič (from 30/11/2012)
- Vice Chairman:
Prof. Leon Cizelj, PhD (from 30/11/2012)
- Board members:
Goran Udovč
Prof. Marko Čepin, PhD
Rastislav Jože Reven

From 21/03/2013¹ until 19/08/2013:

- Chairman:
Martin Bratanič
- Vice Chairman:
Prof. Leon Cizelj, PhD

From 20/08/2013:

- Chairman:
Matej Pirc (from 22/08/2013)
- Vice Chairman:
Danijel Levičar (from 22/08/2013)
- Board members:
Nikola Galeša
Saša Ivan Geržina
Roman Dobnikar

The company's financial statements for 2013 have been audited by the auditing firm Ernst & Young d.o.o.

HOLDING ACTIVITIES OF THE COMPANY GEN

The principal area of operation of the company GEN is activities of holding companies, that is, governing other legally independent companies through equity interests held in them by the company GEN as the controlling company.

As a holding company, GEN carries out management operations through equity interests in subsidiaries and jointly controlled entities by participating in general meetings and by managing financial results of the subsidiaries, pursuant to relevant articles of incorporation or memorandums of association. It also approves relevant documents and appoints representatives into supervisory boards of subsidiaries and jointly controlled entities. GEN's management regularly coordinates its actions with the managements of subsidiaries and jointly controlled entities.

Based on the business results of individual companies within the GEN Group and the Group as a whole, we find that GEN steers the Group well, that the companies are successful in keeping costs under control, and that they fully follow their respective business plans.

¹ On 21/03/2013 the remaining three members of the company's Supervisory Board handed in their resignations and notified the company CEO - director of their resignation, thereby resigning as members effective immediately. From 21/03/2013 to 19/08/2013 the company was without a Supervisory Board with a minimum number of members as required by Article 254 Paragraph 2 of the Companies Act (CA-1) (Supervisory bodies shall be composed of at least three members, unless otherwise provided by law).

1.2 Letter from the Director



In 2013, a year marked by unstable economic conditions in the EU and economic stagnation in Slovenia, we successfully met challenges both external and internal. Particularly in light of the fact that performance of the energy industry and performance of the economy are closely interconnected.

Slovenia's energy industry – the GEN Group companies being vital parts of it – is a strategically important industry, the lifeblood of Slovenia's economy, its functioning and growth. In order to build a competitive economy, we **need a reliable, competitively priced energy supply**. Competitive prices of energy and its **production from clean, sustainable and renewable sources** is also important to our individual customers.

In the GEN Group we stayed true to our sustainable focus on a daily basis by fulfilling our mission, which is to provide a reliable supply of electricity we generate in an environmentally friendly way and at competitive prices. We proved our responsibility by constantly maintaining a balance between business excellence and operational performance, care for society, and environmental responsibility.

We are convinced that the **strategic agenda for the development of Slovenia's energy industry**, whose preparation got underway in the second half of 2013, will strengthen the impact of focuses such as safety and reliability of supply, competitiveness and environmental responsibility, with an emphasis on low carbon emissions,

among others. This is the development framework for the energy industry, to which the GEN Group can make a substantial contribution with its past, present and planned future operations.

Among the central events, achievements and milestones that marked our sustainability-focused operations in 2013 and are featured in the following pages, let me point out the following:

- As much as **99.8%** of all electricity generated by the GEN Group power plants came **from sustainable and renewable sources**. Accounting for 85% in 2013, the nuclear power from Krško Nuclear Power Plant (NEK) is the primary source of electricity, followed by hydropower from SEL and HESS, which made up 15% of the GEN Group's total annual electricity output.
- **Electricity production at NEK was almost 95% on target**. Thanks to excellent hydrological conditions, **hydroelectric power plants exceeded their targets** (SEL's performance exceeded 123%, HESS stood at 121%). Thanks to optimized management and control via the GEN Control Centre, the **Group as a whole performed well**, meeting **97%** of the overall production target.
- **NEK** continued to undergo comprehensive **technological modernization** in 2013 in accordance with its long-term investment plan. The total investment value exceeded EUR 30.72 million. Activities performed as part of the power plant modernization effort resulted in an important safety upgrade and improved working conditions. To find out what caused mechanical damage to the power plant's fuel rods, **several additional operations were carried out as part of the scheduled maintenance outage**: inspection of the reactor vessel and internal structures of the reactor, and an ultrasonic inspection of baffle-to-baffle bolts.

- The **JEK 2 project** is now at the stage where a clear position from the owner, the Republic of Slovenia, will need to be sought. This means that a decision will need to be made in the context of the strategic national development agenda, whose preparation is currently underway.
- In 2013 we also made **investments for promoting electricity production from renewable sources, primarily hydropower**. Of key importance here are investments in SEL's existing facilities (particularly Mavčiče HPP) and in the hydroelectric power plants on the lower Sava River (HESS).
- **Expertise** is the common thread that runs through all the GEN Group companies and makes it possible for us to achieve good business results. We fully recognize the value of educated, knowledgeable, committed and responsible employees. **59 new experts** joined the GEN Group companies in 2013, increasing the **total number of employees to 1103**, more than half of which hold at least a higher education qualification. We were also active in spreading knowledge to the public: by raising awareness of the role of energy and of the knowledge-driven development of the energy industry. **The World of Energy**, our visitor and information centre, **registered more than 7400 visitors**, and we organized various learning and research projects in partnership with schools.

You are invited to read and comment on this report, which highlights the key aspects of our path towards achieving sustainable development in 2013.



Martin Novšak
Director, GEN energija d.o.o.

1.3 GEN and sustainable development

The 2013 report on the pursuit of sustainable development by the GEN Group and its companies (hereinafter: Sustainability Report) is the fifth consecutive yearly report of its kind. The report assesses and evaluates the impacts the operation of our power plants, the planning and implementation of development and strategic projects and the relationships with consumers and other key stakeholders in the local and the national environment have on the three core dimensions of sustainable development: economic, environmental and social.

Much like in previous years, the key topics of this year's Sustainability Report are divided into **seven main sections**, outlining the environmental, economic or technical and social impacts of our operations. The report provides information on the entire GEN Group and its constituent companies: GEN energija as parent, NEK, SEL, TEB, GEN-I and HESS. Individual sections of the report contain clear pointers as to which information refers to the entire Group and which to one or more of its constituent companies.

We are going to continue the practice of releasing annual sustainability reports in the future. We will do our best to maintain, or even improve, the relevance, coherence and understandability of the information presented in the report and to establish a clearer and more direct link between financial and non-financial information for our readers.

Enjoy the read.

We will be pleased to receive any questions, suggestions or comments you may have in connection with this report.

GEN Group Sustainability Report editorial team

e-mail: info@gen-energija.si

1.4 Report's compliance with GRI guidelines

The GEN Group follows the guidelines on reporting on sustainable development, so the substance and structure of this Sustainability Report are compliant with the GRI guidelines (*Global Reporting Initiative* – www.globalreporting.org). This way we provide a clear and transparent view of our operations, results and plans and ensure their comparability at the national and the international level.

The table below includes an overview of relevant GRI indicators by section and by page of the Sustainability Report 2013. The table also lists compliance of this report's contents with standard sustainability reporting guidelines (*GRI: Sustainability Reporting Guidelines. Version 3.1*) and sector-specific guidelines for the electric utility sector (*GRI: Sustainability Reporting Guidelines & Electric Utility Sector Supplement, RG Version 3/ EUSS Final Version*).

Table 1.1 **Report's compliance with GRI G3.1 and GRI RS & EUSS guidelines**

Chapter (Item) in the report	Page	Applicable standard GRI G3.1 indicators (Standard Disclosure) ²	Applicable sector-specific GRI RG & EUSS indicators ³
1. INTRODUCTION	12		
1.1 About the GEN Group and the company GEN	13	2.1, 2.3, 2.4, 2.6, 4.1, 4.2	
1.2 Letter from the Director	17	1.1	
1.3 GEN and sustainable development	19	3.1, 3.3, 3.4, 3.5	
1.4 Report's compliance with GRI guidelines	20	3.12	
1.5 Main highlights of 2013	22		
2 MAIN TOPICS	26		
2.1 Portfolio of sustainable and renewable energy sources: 99.8 percent	27	EN16	EU2, EU5
2.2 Efficient operation: NEK reached nearly 95% of its electricity generation target, the GEN Group 97%	30		EU2, EU6
2.3 Investments in renewable energy sources: EUR 3.1 million	36		EU2, EU6, EU8
2.4 JEK 2 project: technical bases and studies ready	40		EU6, EU8
2.5 Promoting the knowledge of energy and the energy industry	47	4.14, 4.16, EN6, EN7	EU8
2.6 Knowledgeable people: 1103 employees, more than half with at least a higher education qualification	51	4.16, LA1	EU14
2.7 Quality policy and ensuring nuclear safety	56		EU16, EU21
3 KEY PERFORMANCE INDICATORS	64	EC1	EU2, EU8, EU14

² Global Reporting Initiative: Sustainability Reporting Guidelines. Version 3.1, GRI 2000–2011 (www.globalreporting.org).

³ Global Reporting Initiative: Sustainability Reporting Guidelines & Electric Utilities Sector Supplement. Version 3.0/EUSS Final Version, GRI 2000–2011 (www.globalreporting.org).

1.5 Main highlights of 2013

Here is a brief summary of the topics examined in more detail inside the report:

99.8% of electricity we produced came from sustainable and renewable sources

As much as 99.8% of electricity generated by the GEN Group power plants comes from sustainable and renewable sources. Accounting for 85% in 2013, the nuclear power from Krško Nuclear Power Plant (NEK) is the primary source, followed by hydropower, which made up 15% of the GEN Group's total annual electricity output.

[Read more on page 27.](#)

By efficiently operating the nuclear power plant and hydroelectric power plants, the GEN Group met 97% of its overall production target

2,983 GWh of electricity was available to the GEN Group in 2013. Our production units operated efficiently. NEK met nearly 95% of its production target. As the Sava River flow rates were above average in 2013 thanks to excellent hydrological conditions, large hydroelectric power plants exceeded their electricity production targets.

[Read more on page 30.](#)

GEN Group companies made EUR 3.1 million worth of investments in renewable energy sources

In 2013 the GEN Group put into hydropower projects most of its EUR 3.1 million worth of renewable energy sources (RES) investment resources. Of key importance here are investments in SEL's existing facilities (particularly Mavčiče HPP) and in the hydroelectric power plants on the lower Sava River (HESS).

[Read more on page 36.](#)

JEK 2 project: investment in a sustainable energy source

The JEK 2 project meets the criteria for sustainable development in all its three dimensions: social, environmental and economic. The project is now at the stage where a clear position from the owner, the Republic of Slovenia, will need to be sought.

[Read more on page 40.](#)

Promoting the knowledge of energy and the energy industry

Since the fulfilment of our mission is closely connected to the knowledge and understanding of energy and the energy industry and associated projects among various stakeholders, the GEN Group places a strong focus on promoting knowledge and raising awareness. We promoted or sponsored energy-related awareness-raising campaigns and expert business events in a number of ways in 2013.

[Read more on page 47.](#)

Knowledgeable people: 1103 employees, more than half with at least a higher education qualification

We recognize the value of the knowledge of our 1103 employees. We interconnect and exchange the knowledge and experience in a number of ways, among generations and various spheres of operation, as well as among the Group companies.

[Read more on page 51.](#)

Quality policy and ensuring nuclear safety

Commitment to ensuring safety lies at the heart of responsible operations of the GEN Group companies at all levels. Our adherence to standards and conservative approach enable us to deliver high quality and, in turn, meet our reliability requirements and ensure a high level of safety.

[Read more on page 56.](#)

HYDROPOWER

Synergy between hydropower potential and the chain of hydropower plants

SHARE OF
HYDROPOWER
AS A PRIMARY
ENERGY SOURCE:

4%

Large hydroelectric power plants on the rivers Drava, Soča and Sava accounted for around **32%** of Slovenia's total electricity production in 2013, while **hydropower** as a primary source made up **4%**. Hydropower is a **low-carbon, renewable** and relatively **inexpensive source of energy**, the latter being the case with hydroelectric power plants already built.

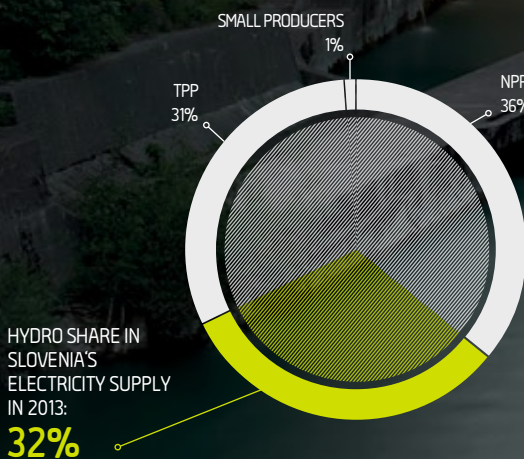
The potential of hydropower is well known and is being extensively tapped in Slovenia. Still, **there is some untapped water potential**, particularly on **the Sava**, which should be harnessed in order to achieve synergy between **the hydroelectric power plants linked into a chain**. Relying on hydrology, that is, weather conditions which affect precipitation levels, the supply of energy from this particular source could suffer from reliability issues.

The GEN Group focuses most of its investments in renewables on expanding the production capacities of the hydroelectric power plants on the **middle and lower course of the Sava**. By making these projects a reality, the existing national hydroelectricity generation output could increase from the present 4,480 GWh to around **5,800 GWh per year***. This way, we ourselves would generate enough clean and low-carbon hydroelectricity **to meet some of the additional demand for electricity used for transportation and heating**.

* Source: Major electricity and natural gas supply indicators for 2013, Energy Agency of the Republic of Slovenia.



ELECTRICITY GENERATION IN SLOVENIA IN 2013 BY ENERGY SOURCE



Slovenia's electric power grid today includes **19 large hydroelectric power plants** with a nominal capacity **above 10 MW**, most of which are of the **run-of-the-river/reservoir type**. This means that a power plant relies on its reservoir for the daily flow regime and uses peak energy at peak demand.

The project to build a chain of hydroelectric power plants (HPPs) on the middle and lower course of the Sava River involves the construction of **ten new HPPs on the middle and six HPPs on the lower course of the Sava**, four of which are already in operation. Once completed, the chain of HPPs on the lower Sava will cause the **current Sava River electricity generation output to increase by around 40%**.

Photo: Medvode HPP, nominal capacity: 13 MW, 2013 production output: 95 GWh.



HYDRO SHARE IN
PRIMARY ENERGY
SOURCES

TODAY

PROJECTED GROWTH

TOMORROW



Main topics

2.1 Portfolio of sustainable and renewable energy: 99.8 percent

As much as 99.8% of electricity generated by the GEN Group power plants comes from sustainable and renewable sources. Accounting for 85% in 2013, the nuclear power from Krško Nuclear Power Plant (NEK) is the primary source, followed by hydropower, which made up 15% of the GEN Group's total annual electricity output.

The GEN Group in 2013 again made a significant contribution towards the achievement of low- or zero-carbon electricity production. Efficiently, safely and, most of all, with a focus on preserving the environment and preventing climate change.

The largest generators of electricity in 2013 were the nuclear power plant (NEK) and the large hydroelectric power plants (SEL and HESS). The electricity output of the gas-steam power plant (Termoelektrarna Brestanica – TEB), which does not count as production from sustainable energy sources, is not included in the Table 2.1. The principal function of this production unit within the GEN Group is to make up for outages of larger production units in the Slovenian electric power grid. In 2013 the output from this power plant accounted for less than 0.2% of the Group's total production.

Table 2.1 **The electricity production portfolio of the GEN Group relies primarily on sustainable and renewable energy sources (data for 2013)**

Type of energy	GEN Group power plant	Electricity production in 2013* (GWh)	Electricity production in 2013* (% of the GEN Group's total output)
Nuclear power	Krško Nuclear Power Plant – NEK	2,518**	85%
Hydropower (large HPPs)	Savske elektrarne Ljubljana – SEL	390	15%
	Hidroelektrarne na Spodnji Savi – HESS	69	
TOTAL		2,977	100%

* The table does not include the electricity produced by small-scale hydroelectric power plants (SHPs) and small-scale solar/photovoltaic power plants (SPPs) because, compared to the output from the nuclear power plant and the large hydroelectric power plants, it only accounts for a small fraction (a total of 0.05% of the GEN Group's total electricity production output).

** NEK generated 5,036 GWh of electricity in 2013. Pursuant to the Intergovernmental Agreement on NEK, the company GEN was entitled to one-half of it: 2,518 GWh.

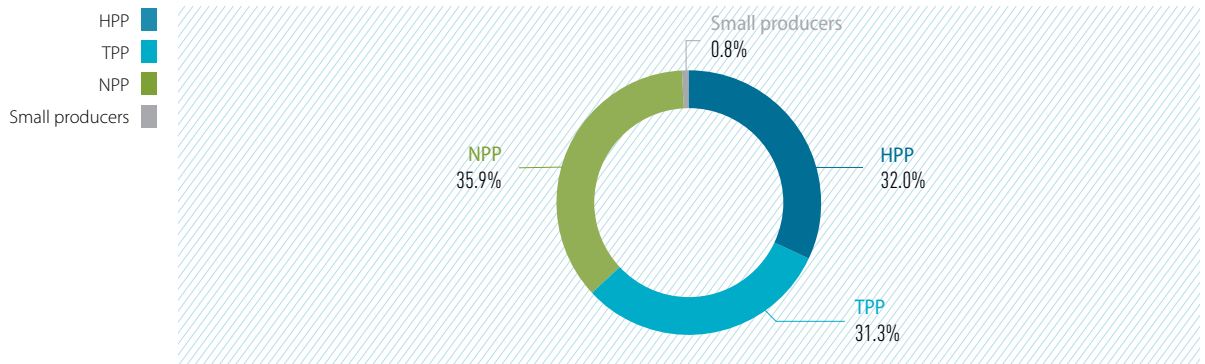
Structure of electricity production sources in Slovenia in 2013

In terms of CO₂ emissions, the GEN Group's production portfolio, compared to the Slovenian (national) portfolio of electricity production sources, is environmentally acceptable and oriented towards sustainability. Figures 2 and 3 compare the structure of electricity production sources in Slovenia in 2013 (source: Annual Report on Transmission Network Operation for 2013, February 2014, available at www.eles.si) against that of the GEN Group in 2011, 2012 and 2013 (source: GEN Group annual reports for respective years). The structure of the GEN Group's production sources does not include data

on the electricity production of small-scale hydroelectric power plants and small-scale solar/photo-voltaic power plants (to learn more, see chapter 2.3).

Outstanding electricity production results of the GEN Group in terms of CO₂ emissions can be credited to the fact that the production almost entirely relies on sustainable and renewable sources, mostly nuclear and hydropower. The percentage of electricity generated from fossil fuels (extra light fuel oil and natural gas, which TEB uses for fuel) is minimal, as it accounts for less than 0.2% of the GEN Group's total annual electricity production and is used merely as backup energy in the event of outages of larger production units in the national electric power grid.

Figure 2.1 Structure of electricity production sources in Slovenia in 2013



Source: Annual Report on Transmission Network Operation for 2013 (available at www.eles.si, February 2014)

Figure 2.2 Structure of electricity production sources in the GEN Group in 2011, 2012 and 2013

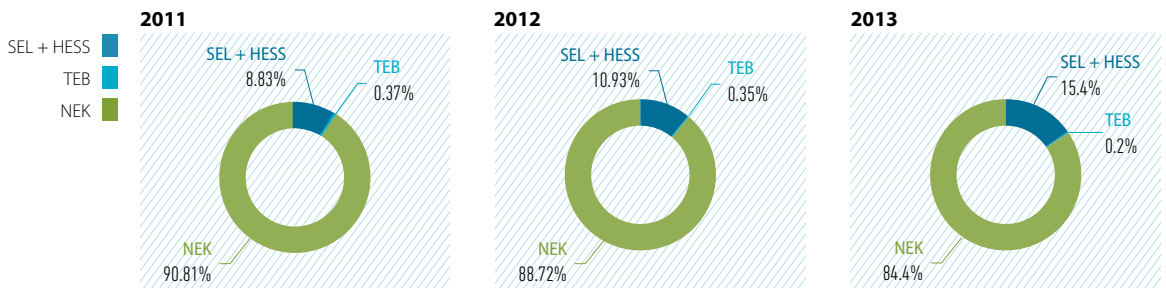
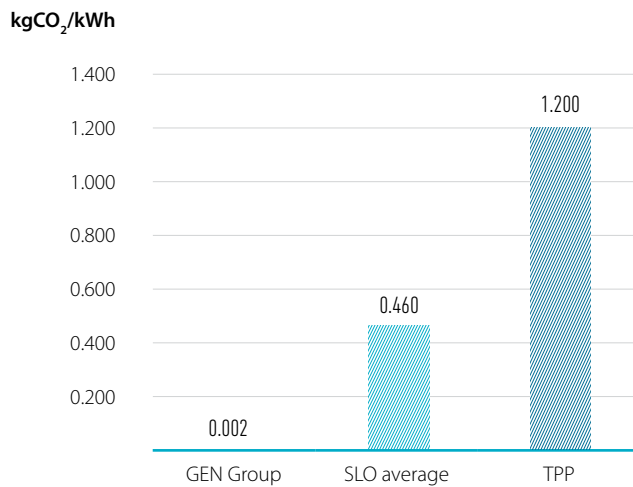


Figure 2.3 **Comparison of CO₂ emissions per kWh generated in 2013 (average values for the years 2010–2013)**



Low CO₂ emissions per generated kilowatt-hour

A comparison of the composition of electricity production sources between the GEN Group and the whole country (on the national scale) for 2013 reveals that the GEN Group's production portfolio, compared with the national one, is environmentally acceptable and oriented towards sustainability.

This fact is underpinned by a comparison of average CO₂ emissions per generated kilowatt-hour in the years 2010–2013. The highest emissions per generated kilowatt-hour at the level of the national production portfolio were produced by thermal power plants: 1.2 kg. This is nearly three times the Slovenian average, which is 460 grams. The average CO₂ emissions per kilowatt-hour generated in the GEN Group, which uses low-carbon nuclear energy and hydropower as main sources, is a mere 2 grams.

NEK is the largest contributor to low-carbon electricity generation of all the GEN Group's power plants. In 2013 NEK generated 5,036 GWh of electricity, one-half of which (2,518 GWh) was available to GEN. This figure makes up as much as 84.4% of the GEN Group's total annual electricity production.



2.2 Efficient operation: NEK reached nearly 95% of its electricity generation target, the GEN Group 97%

Our own production sources generated 2,983 GWh of electricity in 2013. Our production units operated efficiently. NEK, the largest production unit in the GEN Group, met 95% of its production target.

Owing to good hydrology, the Sava River's flow rates were above the long-term average, with the exception of summer months, when flow rates are typically low every year. For this reason, large hydroelectric power plants' electricity production output reached a record high, exceeding the production target by more than 23%.

Thanks to optimized management and control via the GEN Control Centre, the production figures for the entire Group were good: 97% of the production target was reached.

HAVING GENERATED 5,036 GWH OF ELECTRICITY IN 2013, NEK REACHED NEARLY 95% OF ITS PRODUCTION TARGET.

Operating results

NEK, which delivers base-load electricity on the daily load curve throughout the year, generated 5,036 GWh of electricity in 2013, reaching nearly 95% of its production target. NEK's 2013 production was slightly lower than planned because the scheduled maintenance outage was extended due to fuel assembly damage and because two unforeseen shutdowns occurred, one in February, the other in November.

NEK safety assurance and investments in 2013

NEK continued to undergo comprehensive technological modernization in 2013 in accordance with its long-term investment programme. The total investment value exceeded EUR 30.72 million (EUR 15.36 million of which was invested by GEN based on its 50% interest).

Table 2.2 **GEN's performance – electricity production target and results of the GEN Group for 2011, 2012 and 2013 (GWh)**

Year	Target	Result	Ratio
2013	3,071	2,983	0.9713
2012	3,111	2,955	0.9498
2011	3,405	3,250	0.9543

Scheduled maintenance outage

The scheduled annual maintenance outage took place from 1 October to 19 November, which is a little longer than was originally planned. The outage brought an important safety upgrade and improved working conditions.

During the 2013 maintenance outage, the following major activities took place as part of regular preventive maintenance and inspections of components and structures:

- detailed inspection of high-voltage motors and switching equipment,
- calibration of measuring instruments,
- inspection and reconditioning of valves, venting systems and other hardware,
- overhaul of diesel generators, and
- detailed inspections of various pumps.

To find out what caused mechanical damage to the power plant's fuel rods, several additional operations were carried out: inspection of the reactor vessel and reactor's internal structures, and an ultrasonic inspection of baffle-to-baffle bolts.

Other key investments

Other key investments made in 2013 include:

- **Reconstruction of the switching station as a vital contribution to ensuring reliable operation of the electric power grid in this part of Europe.** The switching station underwent extensive reconstruction, which NEK carried out in cooperation with the transmission system operator (TSO), the company ELES. Reconstruction work began during the 2010 maintenance outage and continued with the replacement of all primary switchgear during the 2012 and 2013 outages. The investment will be completed with the replacement of the switching station's unit supply system during the 2015 outage.
- **Installation and connection of a power transformer ensuring the full production output gets reliably transmitted from NEK.** The aim of the modernization was to replace the existing main transformer with a rated power of 400 MVA with a new 500 MVA transformer. This solution allows the full capacity of NEK to be utilized and makes it possible to

Important milestones for NEK

2012 Thirty years of the power plant's commercial operation.

2013 Ten years since the entry into force of the Intergovernmental Agreement between the Government of the Republic of Slovenia and the Government of the Republic of Croatia governing the status and other legal relationships regarding investments in Krško Nuclear Power Plant, its operation and decommissioning, and of the Memorandum of Association.

2014 1 December will mark 40 years since the laying of the foundation stone of Krško Nuclear Power Plant (NEK), and 30 years since the power plant was issued a commercial operating licence.

further expand the power plant's capacity to accommodate for future technological improvements.

- **Installation of a new primary coolant circuit temperature measurement system, which reduces exposure to radiation sources.** The new measurement system, with temperature sensors installed directly in the cooling loops, reduces the complexity of the hardware since it eliminates the need for numerous isolation valves.

Planned technological upgrades in 2014

Ongoing investments in technological upgrades will continue in 2014. NEK's plans include more than 36 upgrades to systems, structures and components. This will ensure safe and reliable future operation.

The most important planned upgrades to be completed or continued in 2014 include:

- safety upgrade, or modernization, of the reactor and containment cooling system,
- flood safety upgrade of the nuclear reactor zone,
- reconstruction of the handling area between the auxiliary building and the radioactive waste storage building, and
- safety upgrade of the steam-driven backup feed pump.

The financial resources earmarked for technological modernization in 2014 amount to EUR 57.92 million and will be sourced from depreciation allowances. These investments are based on administrative requirements and operating experience and ensure higher levels of safety and stability of the power plant's operation.

NEK unit capability factor (according to WANO): 83.5%

The unit capability factor (Performance Indicators as defined by the World Association of Nuclear Operators – WANO), expressed as a percentage, is a ratio between the available electricity generation over a given period of time and the reference electricity generation over that same period.

NEK utilization index: 86.33%

The utilization index, expressed as a percentage, is the ratio between the electricity generation over a given period of time and the energy that would have been generated over that same period if the power plant had run continuously at full capacity.

Table 2.3 **NEK electricity production (GWh) in 2013**

	Target/50% target	Result/50% result	Ratio
NEK	5,318/2,659	5,036/2,518	0.9470

NEK's production target for 2013 was set at 5,318 GWh, and its total annual output was 5,036 GWh, so the power plant's performance rate stood at 94.7%. One-half of it – 2,518 GWh – was available to the GEN Group during this period. This is 141 GWh short of NEK's electricity production target and is directly attributable to the prolonged maintenance outage, taking place from October to November, and two unplanned shutdowns (in February due to unexpected closing of the main isolation valve on the steam line, and in November due to unexpected activation of the reactor protection system). During the maintenance outage and both unplanned shutdowns GEN supplied NEK with 6.5 GWh of electricity for on-site use.

NEK granted an open-ended operating licence to remain technically operational until 2043

In 2013 NEK completed within the given time frame the reviewing stage of the second periodic safety review, on the basis of which the Slovenian Nuclear Safety Administration (URSJV) granted NEK a new operating licence valid for an indefinite period of time. This will allow the nuclear power plant to remain in technical operation for another 20 years provided that, pursuant to the law, it passes a periodic safety review every 10 years and fully implements its Safety Upgrade Programme by 2018.

This extensive and lengthy technical procedure got underway after the first periodic safety review of the nuclear power plant was completed in 2003, when, based on the positive practical experience in the nuclear industry worldwide, a decision was made for NEK to launch the procedure for extending the power plant's service life for a further 20 years beyond the original design life.

In addition, in the coming years NEK will deploy a series of additional safety improvements and continue with its strategy of making ongoing technological upgrades. The basic prerequisites are: implementation of the ageing management programme for safety-critical systems, structures and components, regular and proper maintenance of operating equipment, and the preservation of high operator skill levels and adequate safety culture of all employees.

These requirements have to be met in order for NEK to remain in commercial operation for 60 years, which is, according to plans, until 2043. For the past 15 years NEK has been following its technological modernization strategy and investing substantial resources in securing high levels of operational readiness and nuclear safety and in extending its service life.

Several important projects were completed in 2013 as part of the power plant modernization effort, such as the replacement, installation and connection of a grid-connected transformer, deployment of a new primary coolant circuit temperature measurement system, comprehensive reconstruction of the 400 kV switchyard, and the first two investments under the Safety Upgrade Programme (implementation of a containment filtering and venting system and installation of passive autocatalytic hydrogen recombiners for containment building hydrogen concentration control), all this with the aim of maintaining a high level of nuclear safety and operational stability of the nuclear power plant.

NEK is making intense efforts to draw a long-term action plan as part of its Safety Upgrade Programme, which foresees the upgrading of solutions for preventing potential accidents or mitigating their consequences. Pursuant to a URSJV decision, activities under this programme are to be completed by 2018.

SEL AND HESS EXCEEDED PRODUCTION TARGETS IN 2013 ON ACCOUNT OF GOOD HYDROLOGY

SEL: 390 GWh

The company SEL, whose electricity generation relies primarily on hydropower, exceeded their large HPP production target in 2013 by more than 23% on account of above-average hydrology, reaching a new record high with their combined production output of 390 GWh.

HESS: 69 GWh

Based on its equity interests, GEN was entitled to 69 GWh of electricity from the company HESS (Hidroelektrarne na Spodnji Savi, d.o.o.),

which accounts for 15.4% of HESS's total annual electricity production output. This means that production results exceeded the target by 21%. As is the case with SEL, HESS's results too can be credited to good hydrology, that is, above-average flow rates of the Sava River throughout 2013.

A portion of the electricity generated by HESS was available to the GEN balance subgroup in 2013. Under the amended Rules on the Operation of the Electricity Market, a meter point can belong to more than one balance group, as a result of which GEN is entitled to manage margins totalling 15.4% of HESS electricity production for its own account.

Table 2.4 SEL large HPP electricity production (GWh) in 2013

	Target	Result	Ratio
SEL – large HPPs	315	390	1.2381

Table 2.5 HESS electricity production (GWh) in 2013

	Target	Result	Ratio
HESS	57	69	1.2105

Figure 2.4 Electricity production units of the GEN Group



On account of good hydrology in 2013, the production figures of the GEN Group's large hydroelectric power plants were above average: SEL's performance rate exceeded 123%, HESS's was 121%.

Their combined annual output was 459 GWh of electricity. Production control and supervision of these large HPPs have been optimized and are run from the GEN Control Centre.

2.3 Investments in renewable energy sources: EUR 3.1 million

In 2013 the GEN Group put into hydropower projects most of its EUR 3.1 million worth of renewable energy sources (RES) investment resources. Of key importance here are investments in SEL's existing facilities (particularly Mavčiče HPP) and in the hydroelectric power plants on the lower Sava River (HESS).

HYDROPOWER – KEY PROJECTS AND INVESTMENTS

SEL investments in 2013

The core mission of SEL is to tap the hydropower potential of the Sava River basin in an economically sound manner and to see to the development, spatial planning, building up and exploitation of this watershed. In general, the company focuses its growth on harnessing the energy potential of the Sava River and its tributaries and on tapping other renewable energy sources for generating electricity.

SEL consistently carries out periodic major maintenance work on its facilities and makes intense development efforts in terms of tapping renewable energy sources, particularly hydropower. In 2013 SEL spent EUR 1.89 million in depreciation allowances and other own resources on investments and development.

Below is an overview of some of the major investments made by SEL in 2013.

- **Replacement of grid-connected transformers at Mavčiče HPP**

SEL replaced the first of two grid-connected step-up transformers at Mavčiče HPP in 2013. In doing

so, they installed a forced cooling system (ONAF) and used a natural cooling method (ONAN). This reduced the energy needed for cooling and allowed them to address the issue of noise.

- **Moste HPP reconditioning: stage 2, bottom outlet reconstruction work**

2013 saw the continuation of the second stage of the Moste HPP reconditioning, which mainly involved reconstruction work on the bottom outlet with prior removal of silt upstream of the bottom outlet. Thanks to new technology, work progressed at a much faster pace than was the case in the past. SEL plans to conduct further research into pit slope stability.

- **Reconditioning of double-leaf hook-type gates on Medvode HPP spillways**

Spillway 2 underwent major reconditioning in 2013. The work involved the reconditioning of the chain hoist and the application of anti-corrosion protection to reconditioned structures. The reconditioning was completed in May 2013, when spillway 2 was put into service after completing an extensive trial run.

- **Reconditioning of spillway 1 gates at Vrhovo HPP**

After being in use for over twenty years, the Vrhovo HPP tainter gates were up for service. The plan is to recondition one spillway gates each year, meaning it will take SEL five years to recondition all the gates there.

Spillway 1 was reconditioned in 2013. Work will be completed in the spring of 2014.

- **Acquisition of Goričane SHP**

In 2013 SEL made a decision to buy the small-scale hydroelectric power plant (SHP) Goričane, situated on the Sora River near Medvode. Built in 1931, Goričane SHP has a single generating unit with a

capacity of 200 kW. The plant has been granted a concession licence valid until 2033 and has an average annual production of around 849 MWh. It is in need of urgent reconditioning, and all its equipment will have to be replaced with state-of-the-art, more efficient and scaled-up fittings and installations.

- **SRESA**

By signing a Deed of Partnership for the establishment of the company SRESA at the end of 2011, the companies GEN and SEL joined the project as respective holders of 10% and 30% interests in the company. In 2013, with regard to the construction of hydroelectric power plants on the middle course of the Sava River, the companies GEN and SEL worked on harmonizing the corresponding concession agreement with the competent minister and laying down the company's strategic development programme, but no agreement has been signed to date.

A decision on drawing up a National Spatial Plan (NSP) for the first three hydroelectric power plants on the lower middle course of the Sava River (Renke HPP, Trbovlje HPP and Suhadol HPP) was adopted in August. The company then launched calls for proposals for NSP and NSP Environmental Report developers. Also underway was the development

of a conceptual design for Suhadol HPP, which is set to be completed in early January 2014.

- **Acquisition of Borovlje (Javornik) SHP with sediment retention structure gates**

In October 2012 SEL decided to buy the small hydroelectric power plant Borovlje, located on the Javornik sediment retention structure. To SEL, the installation of a new, larger SHP is also important because it would open up the possibility of building a bottom outlet to facilitate draining of the reservoir before removing gravel from behind the sediment retention structure, something which is now very difficult to do. The valid concession right granted for the water permit was transferred to SEL in January 2013. The construction work on Borovlje SHP will be completed no sooner than 2015 due to deadlines for obtaining an amended water permit and building permit.

HESS project

GEN invested EUR 1.01 million in the HESS project in 2013. Payments began in June and ended in November. Allocation of funds for HESS is provided for in the Memorandum of Association, and the exact amounts are decided by the company's annual general meeting. TEB also invested in the HESS construction project; based on its 2.8% equity interest, TEB paid in a total of EUR 0.2 million in 2013.

SEL and HESS hydroelectric power plants contributed 323 GWh of electricity to the GEN Group's production portfolio in 2012. The GEN Group operates seven large hydroelectric power plants on the Sava River (photo showing Boštanj HPP).



Table 2.6 **SEL small-scale hydroelectric power plants electricity production (GWh) in 2013**

	Target	Result	Ratio
SEL SHPs (Mavčiče, Vrhovo and Borovlje SHPs)	0.588	0.579	0.9846

Production at hydroelectric power plants

SEL and HESS's large hydroelectric power plants generated a combined total of 459 GWh of electricity in 2013. The figures are presented in more detail in chapters 2.1 (electricity production volumes) and 2.2.2 (large hydroelectric power plants' production results against targets).

Below is an overview of electricity production figures of SEL's small-scale hydroelectric power plants (Mavčiče, Vrhovo and Borovlje SHPs), which generated a combined total of 0.579 GWh in 2013 and missed the production target by 0.009 GWh.

SEL has five small-scale photovoltaic power plants (SPPs) – Mavčiče SPP, Medvode SPP, Medvode 2 SPP, Vrhovo SPP and Vrhovo 2 SPP – with a combined nominal capacity of 589 kW. These power plants together generated a total of 0.605 GWh of electricity in 2013, missing the target by 0.035 GWh.

TEB operates three SPPs – TEB 1 SPP, TEB 2 SPP and TEB 3 SPP – with a combined nominal capacity of 170 kW. Having generated a total of 0.144 GWh of electricity in 2013, these power plants also missed the target of 0.158 GWh.

SOLAR ENERGY

Production capacities of photovoltaic power plants are limited compared to the rest of zero-carbon sources in the Group (mostly nuclear and hydropower). We missed our 2013 targets because of the long winter with heavy precipitation.

Together with the SPP on the roof of the GEN Information Centre (installed capacity of 40.32 kW, electricity production totalling 0.039 GWh in 2013), all the GEN Group's SPPs generated a total of 0.788 GWh of electricity from solar energy in 2013, reaching 94% of the target.

Table 2.7 **Overview of small-scale and micro (up to 50 kW) photovoltaic power plants by GEN Group company (installed capacity, electricity output in 2013, output targets for 2013)**

GEN Group company/Production facility	Installed capacity (kW)	Target	Result	Ratio
1. SEL (total)	588.6	0.640	0.605	0.9453
2. TEB (total)	169.8	0.158	0.144	0.9114
3. GEN	40.32	0.044	0.039	0.8864
TOTAL	798.72	0.842	0.788	0.9359

Purchasing electricity from producers holding a declaration for their production facility (RES and CHP)

The GEN Group places a special focus on purchasing electricity from producers with approved and registered production facilities (declaration) for the production of electricity from renewable energy sources and through combined heat and power (CHP or cogeneration). In this segment the GEN Group, along with its partner with which it jointly controls the company GEN-I, is the market leader in Slovenia. We support these producers of electricity by offering them prices that are higher than those set by the law, which in effect represents a direct financial incentive.

Having purchased 321 GWh of electricity in 2013 (up by 99% over 2012), GEN-I consolidated its market position as the largest buyer of electricity from high-efficiency renewable energy power plants and combined heat and power units (purchases from RES and CHP producers). The number of RES and CHP electricity producers increased from 698 in 2012 to 783 in 2013; the growth in volume comes as the result of newly connected solar power plants and contracts signed with hydroelectric power plants and a natural gas-fired district heating plant. In terms of purchases of electricity generated from renewable sources (RES and CHP), GEN-I holds a 40% share of the market in Slovenia.

Figure 2.5 Number of RES and CHP producers in Slovenia

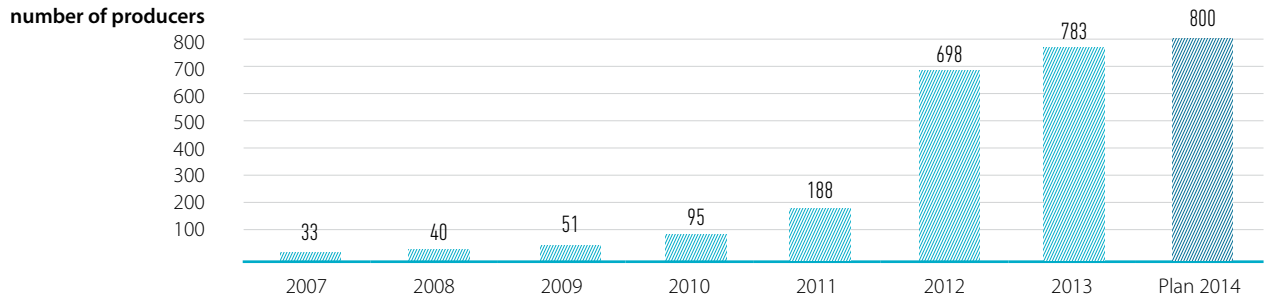
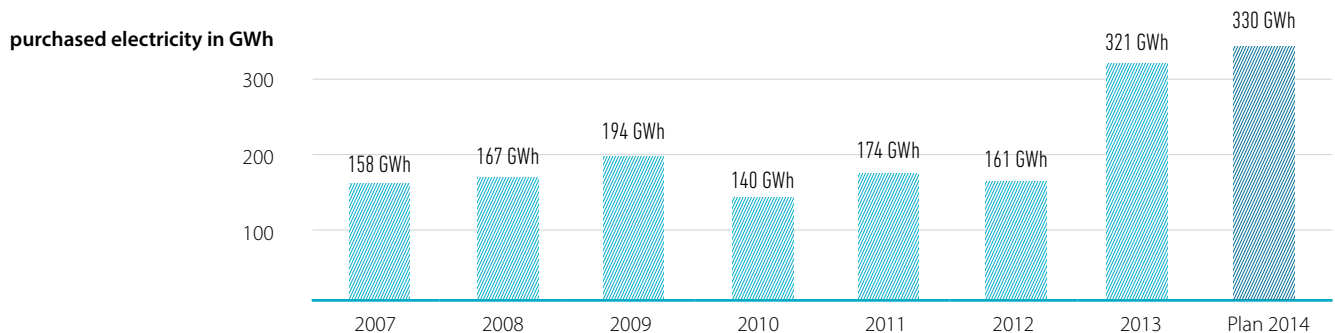


Figure 2.6 Purchased electricity from RES and CHP



2.4 JEK 2 project: technical bases and studies ready

JEK 2 can contribute substantially to the development of a modern, forward-looking, reliable, safe and environmentally friendly nationwide electricity supply at stable and competitive prices.



The GEN Group fulfils its mission first and foremost through investments in clean, sustainable and renewable energy sources for supplying Slovenia with electricity. We place the greatest emphasis on maintaining and expanding our nuclear capability as one of the cornerstones of the sustainable development of Slovenia's energy industry.

JEK 2 can contribute substantially to the development of a modern, forward-looking, reliable, safe and environmentally friendly nationwide electricity supply at stable and competitive prices. With this in view, the GEN Group is campaigning for a technically sound, efficient, transparent and responsible implementation of the JEK 2 project.

The project is now at the stage where a clear position from the owner, the Republic of Slovenia, will need to be sought. What needs to be made is a strategic decision on the future of energy in Slovenia.

The JEK 2 project meets all sustainable development criteria, in all its three dimensions:

- **social:** reliable and safe production and supply of electricity in the long run by using the ultimate, state-of-the-art and safe technologies;
- **environmental:** minimal impacts on the environment and optimal utilization of space; and
- **economic:** stable prices and a competitive range of products and services, both for households and the Slovenian economy.

STRATEGIC FRAMEWORK AND STAGES OF THE PROJECT

Slovenia is facing the problem of relatively old energy-production facilities, which are going to have to be eventually replaced with new ones. At the same time we are growing increasingly aware of environmental impacts and the importance of adhering to the EU climate and energy package. Based on this, we should look into the possibility of expanding the production capacity of Krško Nuclear Power Plant by building a new reactor unit. Also, Slovenia relies heavily on imported energy, and this dependence could be successfully reduced by using nuclear energy, which the International Energy Agency (IEA) recognizes as a domestic energy source, especially if used in combination with smart grids and the electrification of transportation.

Already the draft National Energy Programme (hereinafter: NEP), which was released for public review and cross-border impact assessment in 2011, confirmed the proposed production capacity expansion of Krško Nuclear Power Plant. Under NEP, electricity generation at Krško Nuclear Power Plant was to be preserved over the long run by extending the power plant's service

life, which was envisaged in all three scenarios, and by building a new nuclear power plant; one of the scenarios envisaged the existing and the new unit operating side by side. According to the environmental impact assessment, the JEK 2 scenario would be the best choice in terms of unit of energy because of its lowest impact on the environment. In 2013 the competent ministry started drawing up an Energy Concept of Slovenia, which is to supersede NEP. According to the ministry, this will be a short strategic document outlining the key development focuses of Slovenia's energy industry for the next 40 years. Drawing from an analysis of energy needs, the energy concept is expected to define – in a technologically unbiased way – the optimal energy mix for Slovenia.

The JEK 2 project is divided into five stages:

- **STAGE 1** – Preparations and strategic decision-making, which encompasses strategic, political decision-making on the future development of Slovenia and the country's energy policy;
- **STAGE 2** – Location selection and approval, which encompasses an administrative procedure for siting the new nuclear facility based on the passed Decree on the National Spatial Plan and the issued environmental protection approval for the facility;
- **STAGE 3** – Decision-making on the JEK 2 investment, which encompasses a supplier selection procedure, the search for potential investors for JEK 2, and the obtaining of a building permit;
- **STAGE 4** – Construction of JEK 2;
- **STAGE 5** – Commercial operation of JEK 2.

CURRENT STATUS OF THE PROJECT

To date, GEN has conducted the expert studies in the framework of the JEK 2 project that allow a well-grounded, broader political and social discourse on the future of energy in Slovenia and on the future role of nuclear energy. In doing so, all the bases have been covered to go ahead with the siting procedure and to defend the preservation and expansion of the nuclear power option in the framework of a new national strategic document.

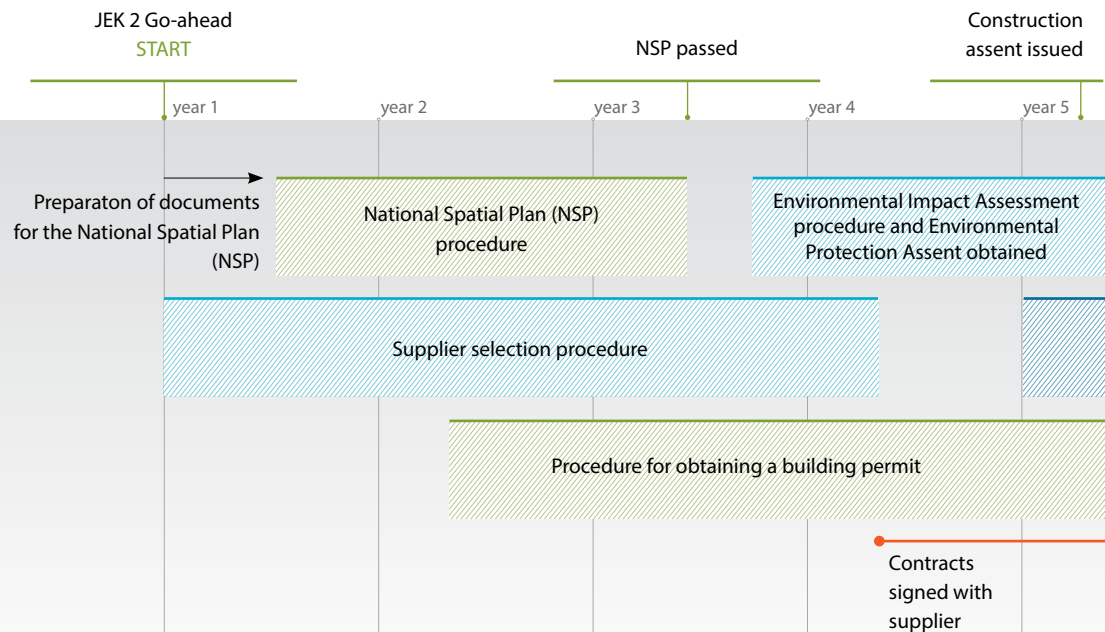
In the preliminary stage of the project, ever since 2006, we have been involved in a number of activities that led to the completion of project feasibility and viability studies, among others. The purpose of the studies was to examine the energy, environmental, technological and economic

feasibility of the project. The project feasibility studies and analyses have been joined together in a single, comprehensive document titled "Pre-feasibility Study of the JEK 2 Project".

The following key documents were produced:

- **conceptual design** of the JEK 2 project, which includes technological solutions developed to accommodate for specific needs of various possible power plant suppliers;
- **assessment of the project's impacts on the economic and social indicators** in the local and wider areas;
- **strategic assessment of environmental impacts** (for siting purposes);
- **draft environmental report** for the overall environmental impact assessment of the new JEK 2 unit at the planning level (for the process of drawing up the National Energy Programme);

Figure 2.7 **Timeline of the JEK 2 project**



- **detailed safety analysis**, including evaluations of safety issues that demanded further attention following Japan's earthquake, and including a safety report needed for the National Energy Programme;
- **analysis of the legal framework** for the construction and operation of JEK 2, including an expert analysis of the relevant national, European and international laws that should be adhered to during project implementation.
- Flood risk category assessment for JEK 2;
- Characterization of the Libna structure;
- Monitoring of the network of seismic stations;
- Possibility of utilizing useful heat from NEK.

ACTIVITIES PLANNED FOR 2014

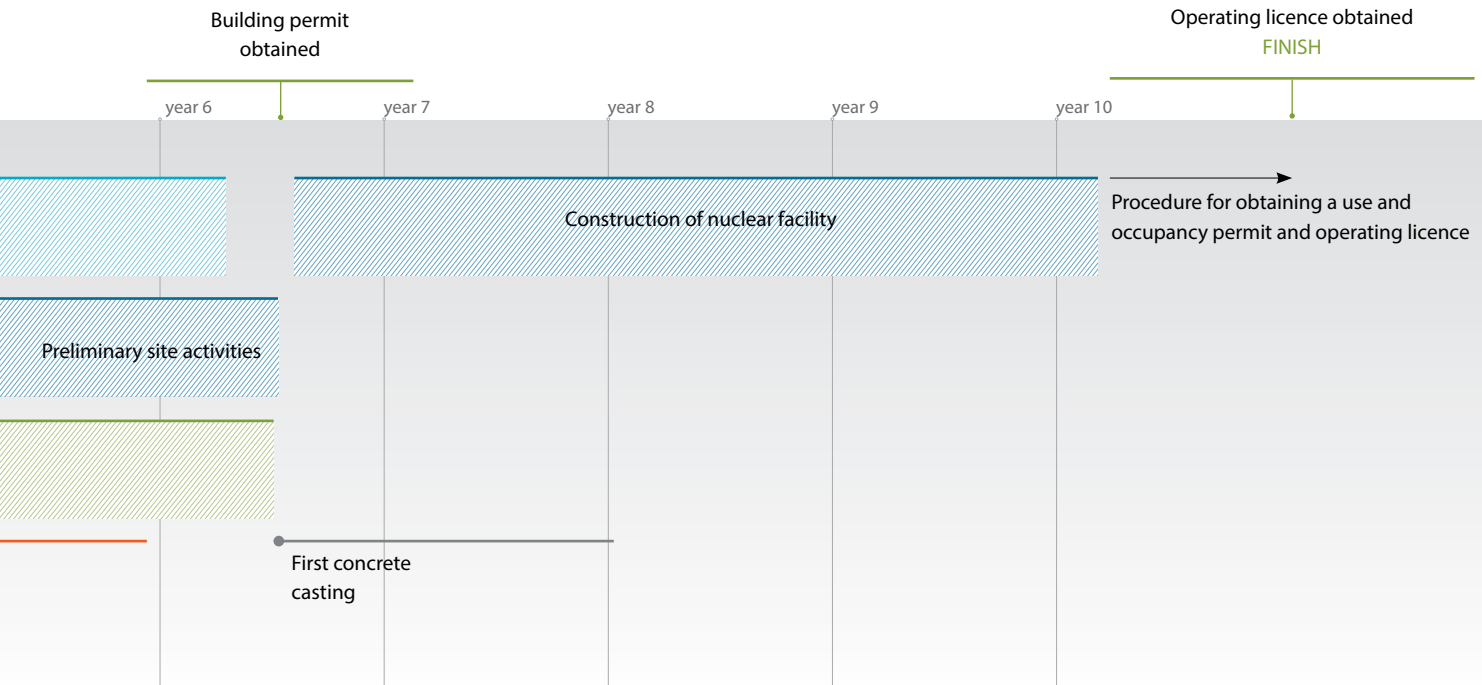
In addition to the studies already completed (see chapters 2.4.1 and 2.4.2), analysis and studies in the following areas are currently underway on the JEK 2 project:

- **financing** (a preliminary analysis of the investment programme and a study of various financing options are being conducted);
- **sustainable development** in connection with electricity generation (Sustainability appraisal of Slovenia's energy policy development by 2030 with a focus on nuclear technology, which will allow a comprehensive assessment of var-

ACTIVITIES IN 2013

Numerous studies, analyses and activities were conducted under the JEK 2 project in 2013, the most important being:

- Geotechnical, geological and seismological location studies for JEK 2;
- Sensitivity study as part of the probabilistic risk assessment in the event of a fault slip;



ious electricity generation technologies and unveil various scenarios for the development of Slovenia's energy policy with an emphasis on sustainable development);

- **geological and geotechnical site surveys**

In 2014 we will continue with technical and expert analyses, siting optimization analysis, construction optimization study, and preparations for the JEK 2 project. At the same we will also gradually start with new key activities such as:

- Obtaining of permits and licences;
- Studies into the planned location of JEK 2;
- Development and analyses of the project area, processes, technological solutions and project engineering for JEK 2,
- Economic and financial analyses;
- Environmental report;
- Security report.

Also, site surveys are expected to continue, and the decision-making process is set to start at the national level and inside local communities.

Creating a synergy between the JEK 2 project and the existing NEK

Slovenia has extensive experience in using nuclear energy. Krško Nuclear Power Plant (NEK) has been in commercial operation ever since 1983 and ranks among the best-performing power plants in Europe and the world in terms of operational reliability.

For Slovenia's electric utility business, NEK is one of the most important pillars of the national power grid. It is the only nuclear power plant in the country and the largest electricity generation facility in terms of installed capacity. Also, it plays

a crucial part in maintaining the stability of the national electric power grid through 400 kV voltage control at a very important junction for the electricity industry. Given its operating characteristics, the power plant is primarily designed to supply base load electricity (to learn more about NEK's 2013 operation, see Chapter 2.2).

The construction of JEK 2 would create a synergy between the two nuclear power facilities, which would in turn increase the positive results also for the existing nuclear power plant. With the many years of successful operation of NEK, the country has in place all the necessary infrastructural organizations and facilities, which will be better utilized and will create additional environmental and social benefits once the second unit of the nuclear power plant has been built. Also, by building the new unit we would be able to make better use of the extensive experience we have in operating a nuclear installation.

Technologically speaking, JEK 2 would create the possibility of optimizing the use of spent nuclear fuel from both the first and the second unit. Spent nuclear fuel is being accumulated and represents an additional domestic source of energy, which can be reprocessed into fresh fuel. With the construction of the new nuclear structure, we would also be able to better utilize the low- and intermediate-level radioactive waste (LILW) repository, particularly with regard to freeing up repository space and, as a result, reducing the mandatory financial resources associated with each unit of generated electricity.

JEK 2 can contribute substantially to the development of a modern, forward-looking, reliable, safe and environmentally friendly nationwide electricity supply at stable and competitive prices.

Why Slovenia needs nuclear energy

The electricity supply situation in Slovenia has been growing increasingly intense over the last decade. As gross domestic product grew and the standard of living moved closer to that of developed EU Member States, power consumption went up as well. Because domestic production could no longer keep up, Slovenia experienced a shortage in electricity as high as 25%.

With the onset of the global economic crisis, which struck in 2008, the situation has changed dramatically. The demand for electricity slightly decreased after 2008 due to shrinking economic activity; however, given the nature of the decrease in consumption, it may be safe to say that this will only be a temporary state of affairs. 10% of the total electricity consumption was imported in 2013. Once the economy recovers, the consumption will again rise in line with long-term trends and projections thanks to energy efficiency measures, among others, many of which envisage the use of electricity instead of primary fossil fuels.

Apart from these general growth projection trends in electricity consumption, in Slovenia we are also faced with the issue of relatively old energy production fa-

cilities, which will have to be eventually replaced. At the same time, we are growing increasingly aware of the impacts the energy industry and other economic activities have on the environment and of the importance of delivering on our EU climate and energy commitments.

Nuclear energy plays a central role here since it can make a substantial contribution towards reducing greenhouse gas emissions (compared to generating the same amount of electricity using fossil fuel technologies). Meeting 20% of Slovenia's total electricity needs, the existing nuclear power plant alone plays a major part in reducing emissions with its non-carbon electricity generation. Based on the above, careful and thorough consideration should be given to using nuclear energy in Slovenia in the long run, which can be achieved by extending the service life of Krško Nuclear Power Plant (NEK) and by planning and going ahead with the expansion of NEK's production capacity, that is, by building a new nuclear unit, JEK 2.

JEK 2 can contribute substantially to the development of a modern, forward-looking, reliable, safe and environmentally friendly nationwide electricity supply at stable and competitive prices.

Key benefits of the planned JEK 2 project

- a safe and reliable supply of electricity (8–12 TWh per year, depending on the size of the power plant);
- a domestic energy source: reduced reliance on imported electricity;
- a competitive energy source: affordable, predictable and stable prices of electricity;
- an optimal solution in response to the environmental requirements and standards, reduced CO₂ emissions on the national scale;
- third-generation reactor: improved technology, enhanced safety, higher economic competitiveness;
- reduction of existing and foreseen quantities of radioactive waste (above all due to improved systems and processes of 3rd generation nuclear power plants, which bring substantial reductions in the amounts of low- and intermediate-level radioactive waste, and also due to the possibility of reusing reprocessed fuel, i.e. up to 96% of the spent fuel mass);
- base and peak load operation;
- compliance with the highest international safety requirements and standards;
- possibility of recovering useful heat (district heating – locally and on a wider scale);
- opportunity for the Slovenian economy to participate in all the development stages (design, construction, equipment manufacturing, outfitting and installation, co-financing);
- positive effects on the nation's economic development and standard of living, highly skilled jobs.

International setting for new nuclear builds

In many countries, for example the USA, UK, Finland, Poland, Sweden, France, China and India, the general public are in favour of building new nuclear power plants. This is because they acknowledge the fact that the benefits of nuclear energy outweigh its dangers, especially in contrast to other electricity generation technologies. Based on this consideration, there is widespread support for nuclear energy and its further utilization under the well-established criteria for providing stable, reliable and affordable energy. In environmental terms, it is one of the most acceptable electricity generation technologies.

In 2013, nuclear energy's social acceptability remained beset by the events at the Fukushima nuclear power plant following the devastating natural disaster. Three years after the accident in Japan, a painstaking safety review of all nuclear power plants in the world is underway, and 18 of them have already applied to be brought back online.

In the EU, Germany continues to pursue its new energy policy, under which all its nuclear power plants are to be taken offline by the end of 2022. The same goes for Belgium, which decided in 2012 to shut down all its nuclear power plants by 2025, while Italy and Switzerland ceased all activities related to nuclear capacity expansion. The other countries with developed nuclear programmes, however, did not change their energy strategies in 2013.

In the aftermath of the incident in Japan, stress tests were conducted at Europe's nuclear power plants, whereby EU member states and some neighbouring countries (e.g. Switzerland and Ukraine) tested the resilience of Europe's nuclear power plants in the event of highly unlikely yet devastating natural disasters and other harmful events. Analyses have shown that Europe's nuclear power plants are well prepared to withstand such highly unlikely events. At the same time, the analyses revealed numerous areas where safety measures would have to be further enhanced. NEK achieved particularly good results and passed the stress tests with flying colours (to learn more about NEK's safety measures and investments in 2013, see Chapter 2.2).

2.5 Promoting the knowledge of energy and the energy industry

Our mission is to provide a reliable supply of electricity from clean, sustainable and renewable sources. How successful we are in fulfilling this mission largely depends on the knowledge and understanding of energy, the energy industry and energy-related projects among various stakeholders. Knowledge and understanding indeed have a strong impact on how challenges connected with the future electricity supply are seen and met.

This is why for several consecutive years now we have been working hard to increase the awareness of energy and raise interest in energy topics among school children and youth, local communities, electricity consumers, expert circles, decision-makers and others. We continued to actively engage in this activity in 2013 as well.

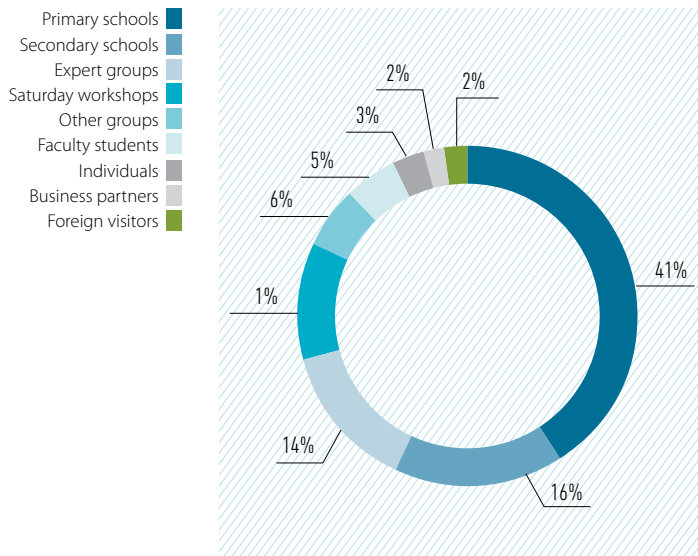
THE WORLD OF ENERGY: 7400+ VISITORS

The World of Energy, our interactive multimedia learning centre on energy and energy technologies, recorded 7410 visitors in 2013. The most numerous were school groups (of which nearly 41% from primary schools), and there were also many different expert parties from businesses and education and research organizations, as well as individuals.

The turnout and the intense interest shown by school groups can be credited to the fact that the World of Energy offers knowledge that coincides with primary and secondary school curricula in the fields of physics, energy generation, natural sciences, and ecology, while shedding light on some topics that are inadequately covered by the curriculum. The learning centre runs expert-led tours tailored to various age groups of children and youth. In addition, we prepared various materials and organized various activities for teachers and mentors in 2013, including:

- worksheets for teachers/mentors and primary and secondary school students on various topics connected with energy and the energy industry,
- technical and natural sciences days,
- collaboration with mentors working with talented primary and secondary school students,

Figure 2.8 **Composition of visitors to the World of Energy in 2013**



- collaboration with mentors and primary and secondary school students on building experiments, scale models or working models, and
- educational workshops for mentors.

“THE YOUNG IN THE WORLD OF ENERGY” PROJECT: SUCCESSFULLY COMPLETED NATIONWIDE CONTEST AND REGIONAL COMPETITION “YOUNG WIZARDS!”

The mission of The Young in the World of Energy project, run by GEN energija in collaboration with the Eco-School as a Way of Life programme, is to educate, raise awareness and pique interest in sustainable energy sources and the different ways of generating electricity and to promote energy efficiency among school children and youths. The Young in the World of Energy contest has been aligned with the contents of the World of Energy in the 2012/13 school year, giving all project



participants access to interactive learning space and to interesting, reliable information on energy and the energy industry.

The following events took place in 2013 as part of The Young in the World of Energy project:

- a nationwide contest for primary and secondary schools and
- a regional competition for eighth and ninth graders (Young Wizards!).

By the end of The Young in the World of Energy project, in May 2013, the contest received more than 220 submissions and attracted around 550 participating children and youths. The primary and secondary school children looked at energy and the energy industry from various angles. Their submissions included a wide array of drawings, comic strips, posters, presentations, radio shows, short video clips, scale models, and various other forms of creative expression. A panel of experts selected from a wide set of interesting and varied products three best submissions in three age groups.



The “Young Wizards!” competition

In the 2012/13 school year we organized the “Young Wizards!” competition in association with NEK. The competition was open to eighth and ninth graders from primary schools in the Posavje region. The competition encouraged young contestants to look deeper into the whole story behind energy, sustainable energy sources, climate change, nuclear energy as a sustainable source, and radioactivity.

As many as 19 Posavje region schools and 256 eighth and ninth graders registered to take part in the competition. The school teams tested their knowledge and skills at the final event held at the Krško Community Centre. The Raka Primary School team was the winner, followed by the teams from Boštanj Primary School and Marjan Nemeč Radeče Primary School.

SUPPORTING INDUSTRY, BUSINESS AND EDUCATIONAL EVENTS AND PROJECTS

In 2013 we provided organizational, expert or financial support to various national, regional and local industry, business and educational events and projects associated with the energy industry (see the table on the next page).

Table 2.8 **An overview of industry events and projects that received our organizational, expert or financial support in 2013**

Conferences, industry conventions, educational events, and contests	Location	Focus group
Energy conference "Corporate Governance in the Energy Sector"	Ljubljana, Slovenia	Energy industry professionals
Expert meeting "Energy Sector and the Environment '13: Integration of Energy and Environmental Solutions"	Brdo pri Kranju, Slovenia	Energy industry professionals
5 th strategic meeting "Energy Innovations '12: Bold, Sustainable, Competitive"	Brdo pri Kranju, Slovenia	Energy industry professionals, business professionals
15 th Meeting of Energy Managers: Efficient Use of Natural Resources	Portorož, Slovenia	Energy industry professionals
Expert meeting "ENERGY SECTOR and the ENVIRONMENT '13"	Brdo pri Kranju, Slovenia	Energy industry professionals
Bled 2013 Strategic Forum	Bled, Slovenia	Political circles, industry and business professionals, decision-makers
International expert conference "Workshop REMOO: Nuclear Energy Development and New Build Prospects"	Ljubljana, Slovenia	Energy industry professionals
22 nd international conference »Nuclear Energy for New Europe«, BLED 2013	Bled, Slovenia	Nuclear energy industry professionals
Krško-Sevnica School Centre: "Technical Wizardry" ("Tehnogenij si ti – tehnogenij svet vrti")	Krško, Slovenia	Secondary school students
Conference for Eco-School Programme Coordinators	Brdo pri Kranju, Slovenia	Teaching professionals
International project EN-LITE (Strengthening ENergy LITEracy) 2013	Ljubljana & Maribor, Slovenia	Students, researchers, teachers and professors (mentors), NGO representatives, media, decision-makers

Conferences, industry conventions, educational events, and contests	Location	Focus group
DJS: Prize competition for students of natural and technical sciences 2013	Ljubljana, Slovenia	Students
Workshop "Scientific Basis for Long-term Radiological and Hazardous Waste Disposal Assessment"	Ljubljana, Slovenia	Radioactive waste disposal professionals
Best Posavje Region Innovations 2012	Krško, Slovenia	Businesses
Slovenian Economic Summit 2013	Brdo pri Kranju, Slovenia	Businesses
NANOAPP: 1 st International Conference on Nanomaterials & Applications	Portorož, Slovenia	Industry and business professionals dealing with nanomaterials
EnRe: 3 rd international conference Energy Technology and Climate Change 2013	Velenje, Slovenia	Energy industry professionals, climate change experts
11 th international symposium Höfler's Days	Portorož, Slovenia	Energy industry professionals
Days of the Posavje Region Energy Industry	Krško, Slovenia	Energy industry professionals
International Conference on District Energy 2013	Portorož, Slovenia	Energy industry professionals
Expert meeting "ENERGY SECTOR and LAW '13"	Brdo pri Kranju, Slovenia	Energy industry professionals, legal experts

eWORLD: ENERGY SUPPLY AND ENERGY FUTURE EXPLAINED ON THE WORLD WIDE WEB

In 2013 we began compiling materials for a website called eWorld (originally: eSvet), whose aim will be to provide visitors with information and interesting facts from the world of energy and the energy industry. The website will be designed for various target groups: primarily school children and youths, various groups of professionals dealing with energy-related topics, the media, NGOs active in the area of energy industry and technologies, and all interested individuals who want to help shape the future of energy in Slovenia with their knowledge.

The main idea behind the project, which will feature numerous graphics, animations and later also interactive content, will be backed up with facts, evidence and figures. The focus will be on illustrating:

- the role and meaning of energy, particularly electricity, in our daily lives;
- today's energy supply in Slovenia, with an emphasis on the role of electricity; and
- key orientations and considerations essential to the shaping of the future of energy in Slovenia.

The website is going to be launched in the autumn of 2014 along with accompanying publicity activities.

2.6 Knowledgeable people: 1103 employees, more than half with at least a higher education qualification

In 2013 the GEN Group companies had a total of 1103 employees. By awarding scholarships we contribute to the development of human resources in the subject areas that are crucial for the future of the energy industry.



The knowledge of our employees is at the heart of our pursuit of sustainable development across all three levels of our operations: business and operating, social, and environmental.

We make ongoing efforts to provide education and training opportunities to all the employees of the GEN Group companies and to promote their professional and personal growth. There were a total of 1103 employees in 2013, 59 more than the year before.

NUMBER AND QUALIFICATION STRUCTURE OF EMPLOYEES

Due to the complexity and scope of work in the GEN Group companies, more than half of the 1103 employees hold at least a higher education degree.

The number of employees in the GEN Group went up by 59 in 2013 over 2012. In 2013 the number of employees increased in the companies GEN and GEN-I. The reasons for the increase in the number of employees in 2013 were:

- rapid growth of the companies, and
- employer's obligations under scholarship agreements.

Table 2.9 **Number of employees in the GEN Group companies as at 31/12/2013 by level of qualification**

GEN Group	Level 1-4	Level 5	Level 6/I	Level 6/II	Level 7	Level 8/I	Level 8/II	TOTAL
GEN	0	4	6	7	31	0	3	51
GEN-I*	1	44	6	42	72	18	9	192
NEK	35	256	80	51	193	14	7	636
SEL	28	36	20	6	19	2	0	111
TEB	27	36	16	10	21	2	1	113
TOTAL	91	376	128	116	336	36	20	1103

The data in the table refer to whole companies, not taking into account GEN's equity interests in individual companies and the rules of consolidation.

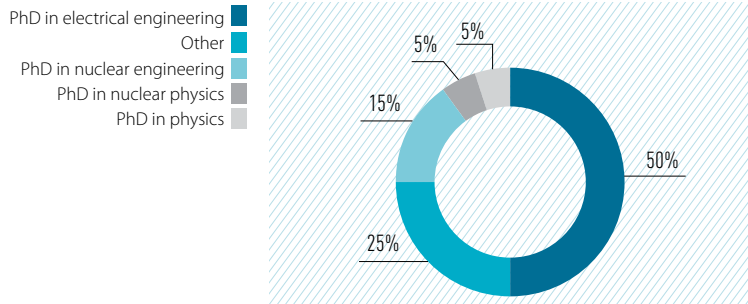
* Data refer to the whole GEN-I Group, not just the company GEN-I.

Table 2.10 **Number of employees in the GEN Group companies: comparison of 2012 against 2013 (as at 31/12 for both years) and plan for 2014**

Year	2012	2013	Plans for 2014
No. of employees	1044	1103	1096

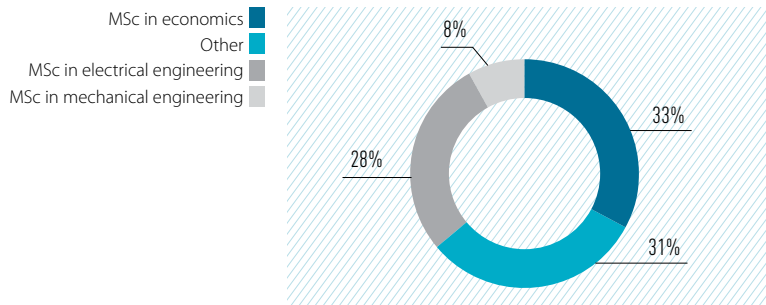
The GEN Group recognizes that, in today's constantly changing world, knowledge and competence of employees are among the essential resources for securing the development, success and competitiveness of the Group. This is particularly true in the case of energy investments, where specific areas of expertise are required. All the Group companies provide training for their existing employees and see to their professional development. At the same time the need for new highly skilled workforce is increasing as the existing employee pool is getting older and has to be replaced in due course.

Figure 2.9 **Qualification level: Doctors of Science**



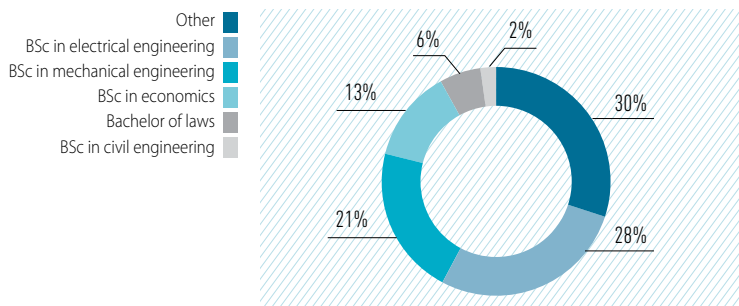
The GEN Group employs 20 Doctors of Science.

Figure 2.10 **Qualification level: Masters of Science**



36 GEN Group employees hold a master's degree.

Figure 2.11 **Qualification level: Bachelors of Science/Arts**



336 GEN Group employees hold Level 7 qualifications.

Such a low employee turnover rate undoubtedly goes to show that our employees are motivated to work in an environment that stimulates knowledge, responsibility and connecting.

The key areas of expertise covered by the GEN Group employees with Level 8 academic qualifications (Masters and Doctors of Science) are:

- nuclear engineering,
- nuclear energy,
- electrical engineering,
- nuclear physics,
- physics,
- mechanical engineering, and
- economics.

SYSTEMATIC PROFESSIONAL TRAINING

In the GEN Group we wisely and strategically invest resources into training of the executive and management staff and other key employees across all our areas of activity. The Group companies carry out professional training programmes in simulators at NEK and TEB, at the NEK Maintenance Training Centre, and the ICJT Nuclear Training Centre of the Jožef Stefan Institute, Ljubljana.

Employee training investments by the GEN Group companies

GEN:

- Technical Sector & Investments employees working on the JEK 2 project take part in extensive training programmes. As a rule, all new engineers must complete compulsory training at the ICJT Nuclear Training Centre of the Jožef Stefan Institute: in 2013 two employ-

ees attended the two-month course Basics of Nuclear Power Plant Technology (theory and/or systems) and four employees the longer, six-month course Nuclear Power Plant Technology (theoretical part).

- Our employees regularly attend expert conferences, seminars, consultations and meetings in their respective areas of expertise, both at home and abroad.
- GEN organized periodic functional training, coaching sessions and workshops, particularly in order for the employees to gain new knowledge in the areas of information technology, project management, business administration, organization of work, and public speaking.

NEK:

- Employees holding a Reactor Operator or Senior Reactor Operator licence receive a minimum of 160 hours of training per year under the ongoing professional training programme.
- Employees with a Shift Engineer licence receive a minimum of 80 hours of training per year. Control room operating personnel receive a total of 1280 hours of training per year.
- The rest of the technical staff each receive a minimum of 32 hours of training per year in the form of theoretical (lecture room) and practical (simulator) sessions, excluding on-site training.
- In all, around 4200 hours of introductory and ongoing professional training was provided to licensed staff in 2013.
- As many as 262 courses, in-house and external, were organized for the employees in 2013. The courses were attended by 5861 people. On average, each employee attended at least four courses.
- As many as 99 courses for external contractors were organized in 2013, which were attended by a total of 4798 people.

SEL:

- In 2013, 85 employees attended various seminars, lectures, exhibitions and trade fairs.
- More than 1000 hours were logged for training (excluding periodic training of operating personnel and in-service education to obtain formal qualifications).

TEB:

- In 2013 each employee received an average of 34 hours of professional education and training in various areas and forms.
- The employees also receive training in the areas of communication skills, good leadership, dialogue, motivation.

GEN-I:

- In 2013 the focus was on top and middle management training, which was attended by a wide range of employees. They completed training programmes in the areas of team leadership, achievement of common goals, effective communication, motivation, leadership by example, etc.
- Through involvement of, and support from, both the top management and a wide range of employees from all areas and levels, in 2013 they developed a comprehensive model of key competences for the GEN-I Group as part of the Metis project. The model lays down key qualities, abilities, knowledge and skills, as well as desired attitudes and behaviour of employees, who are essential to successfully achieving business goals, both today and in the future.
- Employees receive training in their respective areas of specialization. They also attend conferences and meetings not only in Slovenia but also, and especially, abroad, where they upgrade their expert knowledge, exchange best practices and interact with foreign peers.

SCHOLARSHIPS – INVESTMENT IN THE DEVELOPMENT OF FUTURE HUMAN RESOURCES

The rapid growth and expansion of individual Group companies, together with our ambitious development projects, most notably the JEK 2 project and projects to promote renewable energy sources, demand that we systematically plan for future recruitment of highly skilled human resources with specialist knowledge. Human resource planning is one of the major management challenges for the GEN Group.

Unfortunately, Slovenia has been facing a shortage of suitable human resources in recent years, which is especially true for the Posavje region. By providing scholarships to secondary school students and undergraduates, the GEN Group has taken an active approach towards developing human resources in expert areas crucial for the development and future success of our Group and its individual companies. These areas primarily cover the following natural and technical sciences:

- physics,
- electrical engineering,

- energy technology,
- computer and information science,
- mechanical engineering, and
- construction and civil engineering.

The GEN Group runs its own scholarship scheme, which at 31/12/2013 included 41 students (higher and secondary education) with company scholarships at the national level and with scholarships under the Posavje Scholarship Scheme at the regional level.

Group-wide, there were 15 fewer scholarship recipients in 2013 against 2012. Some of the scholarship recipients finished study programmes for which they received scholarships, and some of them lost their scholarship for failing to complete their study requirements.

Table 2.11 Number of scholarship recipients in GEN Group companies as at 31/12/2013

Company	No. of scholarship recipients 2011	No. of scholarship recipients 2012	No. of scholarship recipients 2013
GEN	24	19	8
GEN-I	1	0	0
NEK	24	24	20
SEL	10	9	9
TEB	5	4	4
TOTAL	64	56	41

2.7 Quality policy and ensuring nuclear safety

GEN's quality policy is based around the vision and mission of the Group and is consistent with the modern requirements and standards, core values and strategic goals of the GEN Group.

Also, it is aligned with the strategic pillars of the GEN Group's fulfilment of sustainable development, which extend into three areas of our responsible operations:

- operational performance and business excellence,
- environmental responsibility, and
- caring for society.

In the section where these three areas of sustainable development overlap lie **knowledge** and **safety**, nuclear safety in particular, as two of the highest priorities of GEN's mission.

IMPORTANCE OF GAINING AND PROMOTING KNOWLEDGE

Knowledge is the common denominator of our responsibility in the business, operational, environmental and social spheres. Only with professionally trained employees with proper formal qualifications and functional competences, experience and skills can we achieve our strategic goals responsibly and at the same time ensure safety across all levels.

The motivation to gain knowledge and spread it among coworkers and external stakeholders is essential to our business. We are mindful of the importance of living in a society built on knowledge and professionalism and of the central part it plays in shaping the future of energy in Slovenia.

To learn more about the professional qualifications of the GEN Group employees and our activities in connection with promoting knowledge and raising awareness of energy and the energy industry among various stakeholders, see chapters 2.5 and 2.6 in this report.

Figure 2.12 Pillars of GEN's sustainable development



TOP PRIORITY: NUCLEAR SAFETY

Our safety culture, evident in our unwavering commitment to safety, is at the very heart of all levels of our responsible actions:

- in showing a sense of responsibility towards the local people and the environment in which we operate;
- in ensuring occupational health and safety for our employees, both in production and office settings; and
- in achieving operational efficiency of the GEN Group's production facilities and the resulting business excellence.

Nuclear safety is our top priority when it comes to fulfilling our mission. The human element is a key factor in nuclear safety, so it is absolutely vital that knowledge and systematic training are broadened and strengthened. Nuclear safety assurance is incorporated into all organizations dealing with or connected to the GEN Group's nuclear operations.

The safety of NEK's operation and the preparation of the JEK 2 project is therefore a top priority throughout: in the planning and implementing of decision-making activities and work operations.

To learn more about our completed (2013) and planned (2014) activities concerning nuclear safety, see Chapter 2.2.

QUALITY MANAGEMENT SYSTEM

The management system (quality management system) directly includes all employees of individual GEN Group companies and indirectly all contractors and other associated stakeholder groups as well. All employees are required to adhere to the management system, i.e. safety culture principles, quality standards, and business ethics.

The company GEN started the ISO 9001 certification procedure in 2013. The plan is to obtain the certification in 2014; we will also incorporate – as seen fit – into our management system amendments as envisaged in the new edition of the international standard for quality management systems, ISO 9001:2015. The other companies in the GEN Group have already obtained certifications to various different standards (see below for details).

By adhering to good industry practices, meeting the standards, and adopting a conservative approach to managing changes and risks, we

reach a high level of product quality and, in turn, maintain the expected reliability and high degree of safety.

OVERSIGHT AND ONGOING QUALITY AND SAFETY IMPROVEMENTS

GEN energija is required to monitor, measure and report on its processes, to meet requirements and to continually improve the overall performance rating of its management system, all of which leads to high safety standards. The GEN Group companies are committed to fostering mutually beneficial and positive relationships among employees, the individual companies in the Group, and external business partners so as to lay the groundwork needed for ensuring quality and safety. Managers are responsible for making sure business processes and related activities, as well as improvements, are implemented effectively and in compliance with the management system. Each employee carries their own share of responsibility.

CERTIFICATION: ENVIRONMENTAL MANAGEMENT AND OCCUPATIONAL HEALTH AND SAFETY IN THE GEN GROUP COMPANIES

The GEN Group companies have held ISO 14001 (environmental management system) and OHSAS 18001 (occupational health and safety) certification for a number of years.

Below is an overview of some of the main activities carried out in 2013 and planned for 2014 in the areas of environmental management and occupational health and safety.

Table 2.12 **Overview of activities in the areas of environmental management and occupational health and safety in 2012 and plans for 2014**

Company	Certificate	Completed activities	Key plans for 2014
NEK			
	ISO 14001	<ul style="list-style-type: none"> - second audit in the second certification cycle (December 2013). <p>The audit revealed no discrepancies; however, recommendations were made for enhancing the implemented environmental management system.</p>	<ul style="list-style-type: none"> - implementation of recommendations made during the 2013 audit; - planned recertification audit;
	OHSAS 18001	<ul style="list-style-type: none"> - completion of the second, and last, external audit in the first three-year certification cycle <p>The audit revealed no discrepancies; however, recommendations were made for improving our occupational health and safety system.</p> <p>In 2013 special attention was paid to:</p> <ul style="list-style-type: none"> - preparations for the scheduled maintenance outage; - ensuring work safety; - employee training in occupational health and safety, fire safety, administration of first aid; - providing safety equipment, and - collaboration with and among employees. 	<ul style="list-style-type: none"> - implementation of recommendations made during the 2013 audit. <p>An annual occupational health and safety operational plan for 2014, including an action plan for improvement, was laid down.</p> <p>The central focus is on preparations for NEK's Safety Upgrade Programme, cooperation on other projects, training, occupational safety, reducing the number of work-related accidents, and full adherence to statutory requirements.</p>

Company	Certificate	Completed activities	Key plans for 2014
SEL			
	ISO 14001	<ul style="list-style-type: none"> - environmental programme for improving the conditions in connection with noise pollution at the Medvode HPP generating unit. <p>Continuation of three environmental programmes at Moste HPP (areas: gradual restoration of the natural flow regime downstream of the dam, putting the outlet works into commission, sewage and wastewater disposal) and one at Vrhovo HPP (adaptation of the right bank of the Sava River at Radeče).</p>	<ul style="list-style-type: none"> - continuation of three environmental programmes at Moste HPP and one at Vrhovo HPP.
	OHSAS 18001	<ul style="list-style-type: none"> - device and equipment checks and inspections; - tours of inspection of work stations; - active fire safety systems checks; - preventive medical examinations; - purchase of personal protective equipment, etc. <p>further validity of the certification as per standard was approved.</p>	<ul style="list-style-type: none"> - periodic checking and testing of work equipment, fire alarm systems, emergency lighting, and work environment (brightness, microclimate, noise); - installation of fall protection equipment in high risk areas etc.

Company	Certificate	Completed activities	Key plans for 2014
TEB			
	ISO 14001	<ul style="list-style-type: none"> - regular monitoring and measuring of key operating parameters of processes and systems; - preparation of an environmental report in connection with the project to replace old gas turbines; - continuing to adhere to the requirements of the Decree on Limit Values for Light Pollution of the Environment. 	<ul style="list-style-type: none"> - obtained the SEVESO environmental protection permit; - activities related to the project to replace old gas turbines; - updated environmental protection approval based on the prepared Environmental Impact Report, obtained environmental protection permit as per the IPPC Directive.
	OHSAS 18001	<ul style="list-style-type: none"> - revised safety statement with risk assessments; - operating procedure for working on power plants' hot parts; - amended operational and tactical fire emergency plan; - theoretical and practical training, etc. 	<ul style="list-style-type: none"> - implementation of risk management measures; - activities for promoting health in the workplace; - employee training and awareness raising, etc.

BIOMASS

Abundant natural assets support higher energy usage

Biomass makes up **9%** on Slovenia's mix of primary energy sources, which is high above the European average. In terms of energy supply, the largest share (35%) is used **in households**, mainly for **heating**. Accounting for 14% of the world energy consumption, biomass is the single most important non-fossil, renewable and low-carbon source of energy. Some developing countries meet 80% or even more of their energy needs using biomass.

The share of biomass in energy supply in Europe varies greatly depending on **the wealth of natural assets**. In Alpine and some Scandinavian countries biomass accounts for nearly 20% of the total primary energy supply, while the European average ranges between 2% and 5%.

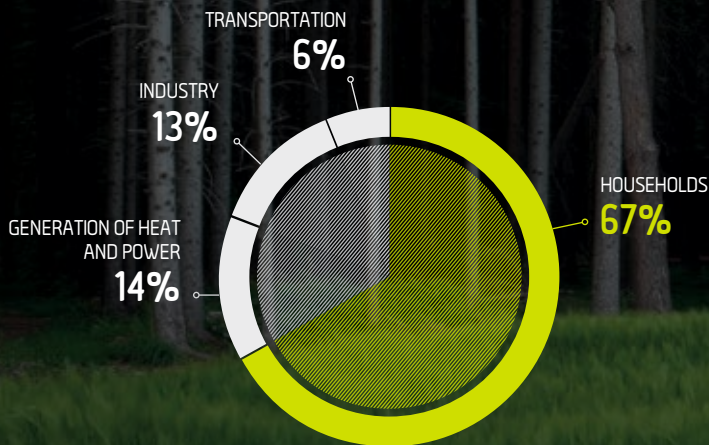
Given Slovenia's wealth of natural assets, biomass most certainly holds **huge energy potential**, particularly in terms of practising **sustainable logging** and burning woody biomass for heating.

SHARE OF
BIOMASS AS A
PRIMARY ENERGY
SOURCE:

9%



BIOMASS CONSUMPTION BY ACTIVITY: HOUSEHOLDS AS THE LARGEST CONSUMERS



Some **100 thousand buildings** today burn biomass for **heating**. Of a number of different biomass types, we almost exclusively use **woody biomass**.

Slovenia is one of Europe's most wooded countries and its estimated sustainable timber harvest is around **7 million cubic metres** per year. Considering the average calorific value of wood, **biomass holds massive energy potential** for generating heat.



SHARE OF BIOMASS
IN PRIMARY ENERGY
SOURCES
TODAY

PROJECTED GROWTH
TOMORROW



Key performance indicators

3.1 Business results

Table 3.1 Business results of the GEN Group

GEN Group	2011	2012	2013	target 2014
Assets in EUR million	719.84	713.57	727.39	727.31
Equity in EUR million	528.64	505.68	520.67	526.03
Revenues in EUR million	573.97	826.92	682.83	803.15
EBIT in EUR million	25.93	23.83	24.29	11.86
EBITDA in EUR million	74.78	67.21	67.61	54.19
Net profit in EUR million	20.72	20.06	20.75	10.39
Value added in EUR million	105.29	98.74	102.12	88.99
Return on equity	3.93%	3.88%	4.04%	2.00%
Electricity sold in GWh	9,509	13,303	12,603	15,421
Equity financing rate	73.44%	70.87%	71.58%	72.33%
Long-term financing rate	84.79%	84.38%	83.85%	85.78%
Operating fixed assets rate	50.92%	51.15%	47.53%	49.27%
Long-term investment rate	58.82%	59.95%	54.00%	56.82%
Equity to operating fixed assets	1.44	1.39	1.51	1.47
Long-term financing of fixed assets	1.41	1.38	1.52	1.48
Immediate solvency ratio – acid test ratio	1.47	1.42	1.60	1.46
Quick ratio	2.65	2.47	2.52	2.60
Current ratio	3.26	3.07	2.99	2.96
Operating efficiency ratio	1.05	1.03	1.04	1.02

The GEN Group's key performance indicators reveal that business was good in the period from 2011 to 2013. Despite the downturn and less-than-favourable market conditions, the GEN Group companies achieved remarkable business results in 2013, which is also reflected in the performance indicators.

The GEN Group is nonetheless healthy and ready to take on new challenges brought about by the fierce competition in the open market. We have sufficient assets and equity to make new investments in those electricity generation projects that will help us fulfil our mission and achieve our strategic goals.

3.2 Production of electricity

Table 3.2 Electricity production targets and results in GWh

Planned and actual electricity output (in GWh)	target 2012	result 2012	ratio 2012	target 2013	result 2013	ratio 2013	target 2014
NEK*	2,655	2,622	0.988	2,659	2,518	0.9469	2,950
SEL	315	286	0.908	315	390	1.2381	310
TEB	100	10	0.100	40	5	0.1250	20
HESS	42	37	0.881	57	69	1.2105	62
SHP and SPP	1.3	1.3	1.018	1.3	1.3	1.0515	1.3
GEN Group total	3,113	2,956	0.950	3,072	2,983	0.9710	3,342

* The ratios for NEK (2012, 2013) are calculated as target-to-result ratios. Pursuant to the Intergovernmental Agreement on NEK, the company GEN is entitled to one-half of the electricity produced (50%).

Table 3.3 Produced electricity available to the GEN Group

Produced electricity available to the GEN Group (GWh)	2011	2012	2013	target 2014
GEN Group	3,250	2,955	2,983	3,342

The large production units in the GEN balance subgroup generated a combined total of 2,983 GWh of electricity in 2013. As much as 85% of the combined total was generated at the nuclear power plant. Hydroelectric power plants contributed 15%. Thanks to the GEN Control Cen-

tre, which coordinates the operations of the entire GEN balance subgroup, the production units operated in sync, and effects of unpredictable events were effectively mitigated, which is clearly reflected in the Group's business results.

3.3 Electricity trading and sales

Electricity purchase and sales figures for the GEN Group have been going up consistently over the past three years.

Table 3.4 Electricity purchased and sold (GWh)

Electricity purchased and sold	2011	2012	2013	target 2014
GEN Group, in GWh	18,094	25,804	24,596	29,996

The table above presents full amounts of electricity purchased and sold (in GWh). The figures do not reflect GEN's equity interests in individual companies and are not disclosed in accordance with the rules of consolidation.

The purchase portfolio of the GEN Group comprises electricity generated by the Group's own production units and electricity purchased from other domestic and foreign producers and energy brokers.

Nuclear energy is the prevailing energy source in the portfolio, and a significant share in the composition of the portfolio is also occupied by

renewable energy sources and the possibility of providing ancillary services, particularly tertiary frequency control.

The GEN Group companies purchased a combined total of 24,596 GWh of electricity, which is down by 4.68% from the previous year.

3.4 Capital expenditures and investments, R&D

Table 3.5 Capital expenditures and investments, R&D of the GEN Group companies (in EUR million)

Capital expenditures and investments of the GEN Group companies	2011 (in EUR million)	2012 (in EUR million)	2013 (in EUR million)	Plan for 2014 (in EUR million)
GEN total	49.32	6.82	4.68	11.09
RESEARCH & DEVELOPMENT	0.65	1.15	1.85	1.43
JEK 2-related and other studies	0.65	1.15	1.85	1.43
CAPITAL EXPENDITURES	9.40	2.91	1.81	1.60
JEK 2 construction project	1.10	2.50	1.43	0.912
IS GEN construction project	4.91	0	0	0
Miscellaneous investments	3.39	0.41	0.39	0.684
INVESTMENTS	39.27	2.76	1.01	8.06
HESS construction project	2.23	0.76	1.01	0.567
SRESA	0.01	0	0	0.545
Acquisition of capital shares, capital injections	37.03	2.00	0	6.950
NEK*	27.10	29.14	15.36	28.96
SEL	5.22	2.24	1.89	6.93
TEB	0.82	6.2	1.18	7.64
GEN-I*	0.43	0.92	2.99	2.25
GEN Group	82.89	45.31	26.09	56.87

* The data for NEK and GEN-I are shown based on GEN's equity interests or in line with the rules of consolidation.

The financial resources earmarked for research and development and capital expenditures and investments are essential to the long-term operating stability and future growth of the

GEN Group and its constituent companies. The financial resources allocated to this end totalled EUR 26.09 million in 2013. Most of it went to NEK for technological and safety upgrades.

3.5 Employees and development of human resources in the GEN Group companies

Table 3.6 Number of employees in the GEN Group companies

Number of employees	2011	2012	2013	Plan for 2014
GEN Group	1026	1044	1103	1096

Table 3.7 Structure of employees of the GEN Group companies by level of education

Structure of employees of the GEN Group companies by level of education	2011	2012	2013	Plan for 2014
Levels 1–4	106	92	91	87
Level 5	372	357	376	372
Level 6/I	121	127	128	128
Level 6/II	94	108	116	116
Level 7	297	318	336	341
Level 8/I	23	24	36	32
Level 8/II	13	18	20	20
Total	1026	1044	1103	1096

Table 3.8 Number of scholarship recipients in the GEN Group companies

No. of scholarship recipients	2011	2012	2013	Plan for 2014
GEN Group	64	56	41	26

The data refer to whole companies or groups of companies, disregarding GEN's equity interests in individual companies and the rules of consolidation.

Acronyms and abbreviations

ARAO	Agency for Radwaste Management	IT	information technology
ARSO	Slovenian Environment Agency	JEK 2	Krško Nuclear Power Plant Unit 2
CHP	combined heat and power	kg	kilogram
CO₂	carbon dioxide	kW	kilowatt
ELES	ELES, d.o.o., electrical power transmission system operator	kWh	kilowatt-hour
ERP	enterprise resource planning	kWp	kilowatt-peak
EU	European Union	LILW	low- and intermediate-level radioactive waste repository
EUR	euro	m	million
EUSS	Electric Utility Sector Supplement	MSc/MA	master's degree
GEN	GEN energija d.o.o.	MW	megawatt
GEN IC	GEN Information Centre	MWh	megawatt-hour
GEN-I	the company GEN-I, d.o.o.	NEK	Nuklearna elektrarna Krško d.o.o. (Krško Nuclear Power Plant)
GRI	Global Reporting Initiative	NEP	National Energy Programme
GWh	gigawatt-hour	NKBM	Nova kreditna banka Maribor d.d.
HESS	Hidroelektrarne na spodnji Savi, d.o.o.	NSP	national spatial plan
HPP	hydroelectric power plant	OHSAS	Occupational Health and Safety Advisory Services
HSE	Holding Slovenske elektrarne d.o.o.	PC	professional college degree
HSE Invest	HSE Invest d.o.o.	PhD	doctoral degree
i.e.	that is	RES	renewable energy sources
IAEA	International Atomic Energy Agency	RH	Republic of Croatia
ICJT	ICJT Nuclear Training Centre	RS	Republic of Slovenia
IEA	International Energy Agency	SEL	Savske elektrarne Ljubljana d.o.o.
Intergovernmental Agreement on NEK	The agreement between the Government of the Republic of Slovenia and the Government of the Republic of Croatia governing the status and other legal relationships regarding investments in Krško Nuclear Power Plant, its operation and decommissioning	SHP	small-scale hydroelectric power plant
		SPP	small-scale solar or photovoltaic power plant
		SRESA	Srednjesavske elektrarne d.o.o.
		TEB	Termoelektrarna Brestanica d.o.o. (Brestanica Thermal Power Plant)
ISO	International Organization for Standardization	TWh	terawatt-hour

U.S. NRC	U.S. Nuclear Regulatory Commission
UNI	university degree
URSJV	Slovenian Nuclear Safety Administration
USA	United States of America
WANO	World Association of Nuclear Operators
WENRA	Western European Nuclear Regulators Association
ZEL-EN	ZEL-EN, razvojni center energetike d.o.o.

