

## 1. Location and capability of nuclear facilities

A large share of primary energy supply in Ukraine comes from the country's uranium and coal resources. The remainder is oil and gas, which is mostly imported from Russia. Ukraine built its first nuclear power plant in 1977 in Chernobyl, which is located 80 miles north of Kiev.

On 26 April 1986, an out of control chain reaction at the Chernobyl plant created explosions which blew off the reactor's heavy steel and concrete lid. The meltdown of the Chernobyl plant was the worst accident in the history of "peaceful" nuclear technology.

At least 56 people died and hundreds of people on site were treated for post acute radiation poisoning. Large areas of Belarus, Ukraine, Russia, Scandinavia and other parts of Europe were contaminated in varying degrees for years after the incident.

Today, about 50% of Ukraine's energy supply is generated by its 15 reactors. The country imports most of its nuclear fuel and services from Russia. The government plans to build up to eleven new reactors by 2030. In late 2006, the government decided to set up a new national nuclear industry entity to be known as Ukratomprom. This will be a vertically-integrated nuclear corporation reporting to Energy Ministry and cabinet. It will initiate construction of an enrichment plant and fuel fabrication.

Ukraine can cover its energy needs completely based on renewable energy and energy efficiency. Wind energy potential in the country is big enough to generate about 70 million MWh per year. In 2006, Andrej Konechenkov, the Vice-President of the non-governmental Renewable Energy Agency, underlines: "The Ukraine has huge reserves of renewable energy, and in particular, the share of wind power produced electricity in the system could reach 20 % by 2020. 23 facilities, which were formerly military production complexes, are involved in the production of wind turbine components.

[http://www.windea.org/home/index.php?option=com\\_content&task=view&id=95&Itemid=40](http://www.windea.org/home/index.php?option=com_content&task=view&id=95&Itemid=40)  
<http://www.uic.com.au/nip63.htm>; <http://www.uic.com.au/nip22.htm>

### Power Reactors

Operational: 15

Shut Down: 4

Under Construction: 2

Planned: 9

<http://www.iaea.org/programmes/a2/index.html>

<http://www.world-nuclear.org/info/reactors.html>

<http://www.uic.com.au/nip63.htm>

### Research Reactors

Operational: 1

Shut Down: 2

Decommissioned: 0

Under Construction: 0

Planned: 0

<http://www.iaea.or.at/worldatom/rpdb/>

### Uranium Mines

*Operating (all in the Kirovgrad region)*

Zheltye Vody

Ingul'skii

Vatutinskii (Smolino)

Severinskoye

Novokonstantinovsk (planned)

*Closed*

Novaya

*Reclaimed*

Olkhovskaya

<http://www.antenna.nl/wise/uranium/uoour.html>

<http://www.antenna.nl/wise/uranium/uddua.html>

<http://www.nti.org/db/nisprofs/ukraine/fisssmat/faciltis.htm>

## 2. Fissile material holdings

**Separated Civil Plutonium:** 41 tons (end of 2003)

[http://www.isis-online.org/global\\_stocks/end2003/plutonium\\_watch2005.pdf](http://www.isis-online.org/global_stocks/end2003/plutonium_watch2005.pdf)

**Highly Enriched Uranium:** 0.16- 0.25 tons (end of 2003)

Supplier- Russia

[http://www.isis-online.org/global\\_stocks/end2003/civil\\_heu\\_watch2005.pdf](http://www.isis-online.org/global_stocks/end2003/civil_heu_watch2005.pdf)

### Radioactive waste disposal

*High-level waste:* At Zaporozhe, a long-term dry storage facility for spent fuel has operated since 2001, but other VVER-1000 spent fuel is sent to Russia for storage. In 2011, high-level wastes from reprocessing Ukrainian fuel will be returned from Russia to Ukraine. Spent fuel from decommissioned reactors at Chernobyl is stored on site and a new dry storage facility is under construction there. Preliminary investigations have indicated sites for a deep geological repository for high-level waste and intermediate-level waste, including all those arising from Chernobyl decommissioning and clean-up.

[http://www.world-nuclear.org/info/printable\\_information\\_papers/inf46print.htm](http://www.world-nuclear.org/info/printable_information_papers/inf46print.htm)

## 3. Nuclear Activities

### Research Centers

Kiev Institute for Nuclear Research

Kharkiv Institute of Physics and Technology

Sevastopol Institute of Nuclear Energy and Industry

Chernobyl Center on Problems of Nuclear Safety, Radioactive Waste, and Radioecology

[http://www.nti.org/db/nisprofs/ukraine/reactors/ff\\_ukrea.htm](http://www.nti.org/db/nisprofs/ukraine/reactors/ff_ukrea.htm); <http://www.radwaste.org/research.htm>

### Nuclear Cooperation

*US:* In October 2004, a Memorandum of Understanding on safety and security of radiation sources in Ukraine was signed. The US will provide finances to help Ukraine develop an existing register to track radioactive materials throughout the country in order to prevent terrorists from acquiring dangerous materials for possible use in so-called dirty bombs. <http://www.nti.org/db/nisprofs/ukraine/reactors/power/wastedev.htm>

Under an August 2005 U.S.- Ukraine agreement, the United States will fund security upgrades at key Ukrainian biological institutes where dangerous microbes are kept.

[http://www.nti.org/e\\_research/profiles/Ukraine/index.html](http://www.nti.org/e_research/profiles/Ukraine/index.html)

*Russia/ Kazakhstan:* In 2002, the government of Ukraine approved a trilateral agreement with Russia and Kazakhstan to start the development of a joint venture to manufacture nuclear fuel. Interruptions in natural gas supply from Russia in January 2006 sharply focused attention on the need for greater energy security and the role of nuclear power in achieving this.

[http://www.bellona.no/en/international/russia/nuke\\_industry/co-operation/channel15203n25s25\\_.html](http://www.bellona.no/en/international/russia/nuke_industry/co-operation/channel15203n25s25_.html)

<http://www.uic.com.au/nip63.htm>

*G7:* In 1995, Ukraine signed an agreement with the G7 countries to close the last reactor in Chernobyl in 2000. In exchange, Ukraine received financial and technical support for constructing two nuclear generating units-Khmelnitskiy 2 and Rovno 4-to provide replacement electricity.

<http://www.nei.org/index.asp?catnum=3&catid=627>

In April 2006, the Nuclear Regulatory Commission and the State Nuclear Regulatory Committee of Ukraine (SNRCU) signed a bilateral arrangement, for the exchange of technical information and cooperation in nuclear safety matters. Under the arrangement, the NRC and the SNRCU may exchange technical reports supporting licensing actions, information on reactor safety research, and data on operating experience, including incidents, accidents or shutdowns, as well as documents on emergency planning and response for nuclear power reactors.

<http://www.nrc.gov/reading-rm/doc-collections/news/2006/06-050.html>

## 4. International Non-Proliferation Efforts

### Treaties Signed and Ratified, date of deposit

Antarctic Treaty, 28 October 1992  
APM Convention, signed 24 February 1999 (not yet ratified)  
Biological and Toxin Weapons Convention, 26 March 1975  
Certain Conventional Weapons Convention, 23 June 1982  
Chemical Weapons Convention, 16 October 1998  
Comprehensive Nuclear Test Ban Treaty, 23 February 2001  
Convention on the Physical Protection of Nuclear Material, 6 July 1993  
Nuclear Non-Proliferation Treaty, 5 December 1994  
Outer Space Treaty, 31 October 1967  
Seabed Treaty, 3 September 1971  
START I, signed 31 July 1991  
ABM Treaty, MoU on Successor States to the ABM Treaty, 11 January 2001  
Vienna Convention on Civil Liability for Nuclear Damage, December 1996.  
[http://www.iaea.org/Publications/Documents/Conventions/liability\\_status.pdf](http://www.iaea.org/Publications/Documents/Conventions/liability_status.pdf)

Ukraine signed the IAEA Additional Protocol 15 August 2000 but has not yet ratified.

### Multilateral Groups

Conference on Disarmament  
Hague Code of Conduct  
Missile Technology Control Regime (MTCR)  
Nuclear Suppliers Group  
Wassenaar Arrangement  
Zanger Committee

## 5. Positions Taken in International Fora on Various Issues of Nuclear Disarmament

*Nuclear Disarmament:* "Inability to agree on set of commitments in the area of disarmament and non-proliferation has become one of the major setbacks of the 2005 World Summit. More than a decade ago Ukraine has made historical contribution in this area when it unilaterally renounced the third largest nuclear weapons arsenal in the world. Therefore we call on Member States to strive for achieving progress in the areas of disarmament and non-proliferation in the UN and other fora for the sake of future generations." - **Statement by Borys Tarasyuk Minister for Foreign Affairs to the First Committee of the 61st General Assembly, New York, 25 September 2006.**

<http://www.reachingcriticalwill.org/political/1com/1com06/disarminde06.html#ukraine>

*NPT:* "Ukraine has repeatedly stated that the NPT is the cornerstone of the global non-proliferation regime and the essential foundation of the pursuit of nuclear disarmament under article VI of the Treaty. We continue to attach great importance to achieving the universality of and universal compliance with the NPT, as well as the 13-point action plan. We call upon all States which have not yet done so to adhere to the Treaty without delay, and unconditionally. Pending its entry into force, we urge all States with a nuclear capability to abide by a moratorium on nuclear test explosions and refrain from any actions which are contrary to the Treaty. I would like to stress that progress on nuclear disarmament is as essential to winning the struggle against proliferation as ever. There can be no progress in combating the scourge of nuclear proliferation without tangible steps in nuclear disarmament, and vice versa." - **Statement by Yevhen Bersheda to the Conference on Disarmament, Geneva, January 31st 2006.**

<http://www.reachingcriticalwill.org/political/cd/speeches06/index2.html>