Introduction

The Sustainable Energy Watch (SEW) report for Ukraine was completed in 2001 for the first time, using SEW's methodology[2] is used to calculate indicators.

In preparing the report, a combination of national sources and data from international organisations as the OECD, World Bank and the EU's TACIS Programme, were used. Since different methodologies are used by the different sources, some data may not correlate correctly. Unfortunately, the authors were not able to find all data for the same year, making it difficult to do comparisons. However, all indicators are calculated for 1990. Data for the later years shows the trend for value change.

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[2] The Sustainable Energy Watch of Helio International. See <www.helio-international.org>

Ukraine and the Energy Sector at a Glance

Population	49.7 million	(1999)
Population growth (annual %)	-0.8	(1999)
Currency	Hryvna	
Exchange rate	UAH 5.43=USD 1	(2000)
GDP at market prices (billion USD of July 2000)	42	(1999)
GNP per capita, Atlas method (USD of July 2000)	750	(1999)
Inflation	25%	(2000)
Annual CO_2 Emissions		
CO_2 Emissions FCCC Base year (m tones CO_2)	711	(1990)
Energy Consumption (PJ)	6,878.1	(1995)
Energy Import (PJ)	3,130.8	(1995)
Energy Intensity (MJ/USD)	97.95	(1995)
Electricity Consumption (TWh)	166.8	(2000)

►General Discussion of Ukraine

Geographic location: Eastern Europe, between Poland and Russia, bordering the Black Sea.
Total area: 603,700 sq. km (app. 240,000 sq. mi.). Comparative area: slightly bigger than France.
Natural resources: iron ore, coal, manganese, natural gas, oil, salt, sulphur, graphite, titanium, magnesium, kaolin, nickel, mercury, timber.
Land use. Arable land: 56%. Irrigated land: 26,000 sq. km (1990).
Environmental issues: air and water pollution, inadequate supplies of potable water, radiation contamination in the north-east from 1986 accident at Chernobyl Nuclear Power Plant, deforestation.

Ukraine achieved its independence in 1991 following the break-up of the USSR. Since then the Ukrainian economy has experienced a dramatic decline. Slow economic and political reforms did not facilitate economic recovery. Last year Ukrainian GDP showed growth for the first time in ten years.

On one hand, the Ukraine inherited a highly educated population, a good health care system, and well-developed energy and public transport infrastructures. On the other hand, the country has a high level of corruption and political unrest. The Ukraine used to have modern industries. However, these industries were attached to the military industry and are now in stagnation. The economy has shifted to industries with high-energy consumption like metallurgy.

▸Energy policy

The Ukraine has about 55 GW of installed generation capacity and about 50 million people, but faces a serious and growing energy crisis. Since its independence in 1991, Ukraine's energy utilities have not been able to recover their costs, quality of service has deteriorated, and thermal and hydro plants badly need refurbishing. The average retail electricity price tripled from 1994 to1997, reaching $39/MWh, which is close to its economic costs. Electricity cost per capita has increased dramatically, and the percentage of utility income received in cash has declined. Real per-capita income has declined as well.

Two results of this are political pressure to keep prices artificially low and an enormous non-payment problem. The non-payment problem is exacerbated by special government sanctions that remove the obligation to pay electricity bills for a broad host of groups. The non-payments problem is joined by a cash-collections problem that requires barter to provide compensation for electricity and fuel.

Ukraine's high-energy intensity and low end-use efficiency make it highly dependent on electricity production. The current electricity economy relies heavily on nuclear power (50%), imported oil and gas from Russia and Turkmenistan, and low quality domestic coal. Its thermal power plants, including combined heat and power units, have an average efficiency of approximately 10,355 Btu/kWh.

Thermal plants have insufficient funds to procure fuel, have low average utilisation rates (30-35% capacity factors), and Ministry for Fuel and Energy controls daily plant dispatch. Most of these plants lack controls and cannot follow load, which contributes to frequency fluctuations and use of load curtailment to reduce low frequency excursions.

Electricity exports are limited (to Poland, Moldova, and Russia), largely because the Ukraine grid cannot maintain frequency (50 cycles) within acceptable limits (+/- .025 cycles). This limits Ukraine's ability to benefit from electricity trade and interconnection for reliability and ancillary services.

The political context is one where key decision-makers lack the will to implement real reforms. Any possible market forces, for example, have been muted completely by centralised control or routine government intervention. In short, energy policy lacks certainty and the necessary legal institutions and laws to implement so-called "twin sector approach" to mitigate energy related environmental issues.

►Environmental policy

Since its independence, in response to significant environmental deterioration, the country adopted basic environmental legislation and proclaimed the introduction of a new environmental policy. These are often very general statements of policy, many of which refer to the importance of "command-and-control" approach. Few of these policy statements are, however, based on holistic approach to economy/ environment interactions during the transition period or backed up by specific legislation, obligations and resources.

In June 1991 Verkhovna Rada (the Parliament) adopted a general environmental law -- the Law on the Protection of the Environment. The provisions of the law touch on nearly all aspects of environmental management and state very idealistic goals, but define few clear commands or enforcement mechanisms. Unfortunately, as with legislation of the past, the law remains primarily a declarative document.

In 1992 Parliament announced the whole territory of the country as a zone of environmental disaster. This merely political declaration had a very limited environmental outcome, as it did not clearly delineate process or authority for specific activities, and it did not set priorities or deadlines. Moreover, it was not based on the well-structured National Environmental Action Plan.

In spite of the provisions of the UNCED, the National Agenda 21 or any other equivalent document has not been adopted by the Parliament.

Map1. Major Power Stations and Transmission lines in Ukraine