Experience of implementation of energy efficient projects in Vinnytsia city
Modern Vinnytsia is a city striving for development as a modern, comfortable, innovative European city and a regional center.

- Population – 372,4 thousand people
- Area – 69 km²

Geographical location of the city provides advantageous connection of road and rail transport with all regions of Ukraine, Azov and Black Seas’ ports.
Вінниця-2020: місто привітних та усміхнених людей

**Strong community City** – місто з сильною громадою

**Modern City** – сучасне місто

**Interesting City** – цікаве місто

**Energetic City** – місто, повне енергії

**Liveable City** – місто, зручне для життя
Development strategy “VINNYTSIA-2020”

Strategic priorities

- Economic development
- Quality of life
- Urban and spatial development
- Sustainable ecological development and improving of communal services
- Formation of a strong community

VINNYTSIA 2020
On July 1, 2011 the City of Vinnytsia officially supported large-scale initiative of the European Commission on sustainable urban development, known as the Covenant of Mayors. Covenant signatories seek for reducing their CO2 emission by at least 20%, energy consumption by 20% by 2020, thus contributing to the development of environmentally oriented economy and improvement of quality of life.
To achieve this goal, the City jointly with Swiss consultants developed the Sustainable Energy Action Plan (SEAP) up to 2020. On June 21, 2013 SEAP was approved by City Council’s decision №1356 and on June 2014 the European Commission approved it.

SEAP: 125 measures

Base line year: 2010
CO2 Emission: 2’417’500 t/year

SEAP 2020 goals:
- CO2 reduction 22%
- Energy consumption savings: 20,5%

Total investment by 2020: 220 million EUR

Investments in building sector by 2020: 52 million EUR

Focus is on district heating system: 54% of total investment
Memorandum of Understanding between the State Secretariat for Economic Affairs of the Swiss Confederation, Government of Ukraine and the City of Vinnytsia on granting of technical and financial assistance for the Energy Efficiency Vinnytsia Project was signed on November 11, 2011 and foresees (according to new redaction of Memorandum, which was signed on March 26, 2015):

- **Implementation of investment program on improving city’s heating supply in 3 districts**
- **Development of institutional capacity of municipal enterprise VinnytsiaMiskteploEnergo**;
- **Technical assistance in implementing the approach European Energy Award**

**Total Project Budget**
27,154 MIO CHF including:
- 20,6 MIO CHF – Swiss contribution (grant);
- 3,275 MIO CHF – City Council’s contribution;
- 3,275 MIO CHF – contribution of the municipal enterprise VinnytsiaMiskteplo Energo

**Expected results:**
2,912 thousand m3 gas savings
5747 tonnes / year CO2 reduction
Memorandum with Swiss Government and directions of its implementation

Measures:

- reconstruction of boiler-houses;
- decommissioning of non efficient boiler-houses;
- installation of 100 ITPs/ individual heating units;
- reconstruction of 9,3 km of the heating networks;
- installation of 2 wood chip boilers (3 MW each);
- installation of SCADA system.
**Reconstruction of heat-supply networks**

**DeMo Ukraine**

**Measures:**

- Reconstruction of 1.5 km of the heating networks;
- Decommissioning of non efficient boiler-house;
- Reconstruction of TsTP/ central heat point;
- Installation of 10 ITPs/ individual heating units;
- Installation of SCADA system.

**Total budget of project:** 681882 EUR

**Loan:** 219954 EUR  
**Grant:** 299893 EUR

**Expected results:**
- 426 thousand m3 gas savings
- 840 tons / year CO2 reduction
Windows replacement for energy efficient ones in the school #25

Funds received through UNEP (EU grant funds) for demo project

108,0 thousand USD

Funds received through UNEP (EU grant funds) for demo project

153,0 thousand USD

Energy audit was carried out and technical documentation was prepared

Energy audit was carried out and technical documentation was prepared

363 windows were replaced for double-chamber metal-plastic ones with energy efficient coating

363 windows were replaced for double-chamber metal-plastic ones with energy efficient coating

Total value of the project

Total value of the project

Before

Before

After

After

Expected results:
248 077 kWh/year net savings
63 tons/year CO2 reduction

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248 077 kWh/year net savings
63 tons/year CO2 reduction
Waste management

- 12 drills and flare plant for landfill gas burning on the landfill were installed;
- burning of methane is conducted permanently (8400 m³ per day, 252000 m³ per month);
- a waste sorting station on the landfill was installed;
- pilot project of separate collection of household solid waste by two-fractions' system (dry, wet) was developed;
- cogeneration facility was installed (capacity 400-500 kWh).

Total value of the project: 1,5 MIO EURO

Expected results:
- improving the environmental situation by creating an ecologically safe landfill;
- reducing a part of landfill waste exposed to biological degradation;
- creating additional new job places;
- the unit will produce up to 1 MW of electricity and 1,2 MW of heating energy per hour.
Public lightning management

Current situation:
- 819 km of grid of public lightning
- 20,345 bulbs with energy efficient lamps
- New generation of automated control systems of public lightning

Total value of the project: 1,2 MIO UAH
Loan: 430,6 thousand UAH

Expected results:
- Optimal functioning of the public lighting system;
- Energy savings;
- Positive social effects
**Public transport**

**Kelecka Str. – Barske highway**

- **Period of construction:** 2008 - 2014
- **Total value of the project:** 87,0 MIO UAH
- **Length:** 2,0 km

- 5 tram routes
  - 74 trams

- 15 trolleybus routes
  - 131 trolleybuses

- 12 bus routes in usual traffic system
  - 47 buses

- 31 bus routes in mode taxi system
  - 264 buses

**National program:**

- In 2014 40 trolleybuses and 30 buses were bought

**Total budget (Loan):** 113000000 UAH

**E-ticket project:**

Evaluation and implementation of electronic tickets with a discount program for customers of travel cards to all types of public transport

**Total value of the project (Loan):** 8 MIO EURO
On April 10, 2014, was signed the Memorandum of Understanding between the USAID Project «Municipal Energy Reform in Ukraine" and Vinnytsia City Council on cooperation in the framework of technical assistance.

The project is scheduled for 4 years and includes the following areas:

✓ Improving the regulatory and legal framework for clean energy;
✓ Promoting investment in technology and the use of clean energy;
✓ Capacity building and dissemination of achievements;
Reconstruction of heat-supply system

Measures:

- reconstruction of heating networks with installation of co-generation units at the district boilers of central heating
- reconstruction of 32,3 km of heating networks
- decommissioning of 15 TsTP/ central heat points
- installation of 220 ITPs/ individual heating units

Expected results:
4,580 MIO m3 gas savings
5,59 MW electricity savings

Total budget: 43,3 MIO USD
Loan: 43,3 MIO USD
## Priority projects 2015

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Thank You for Your Attention!