

Information Exchange in Science and Technology between the
European Research Area and Eastern
European/ Central Asian Countries



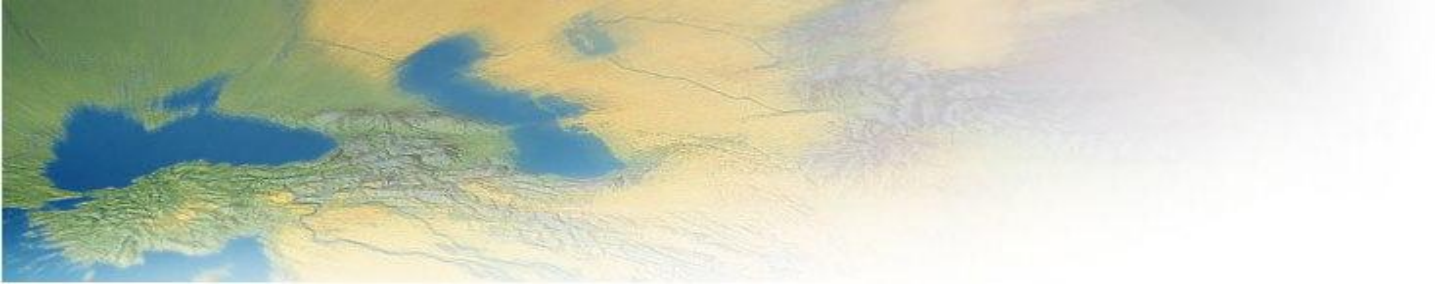
UKRAINE

Country Report

(updated 5 February 2015, source: **NIP Ukraine**)

IncoNet EaP





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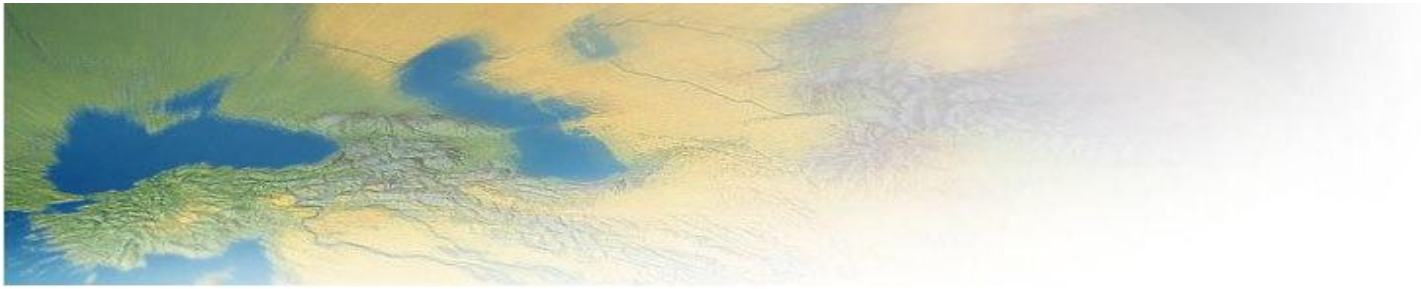
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General Information about Ukraine

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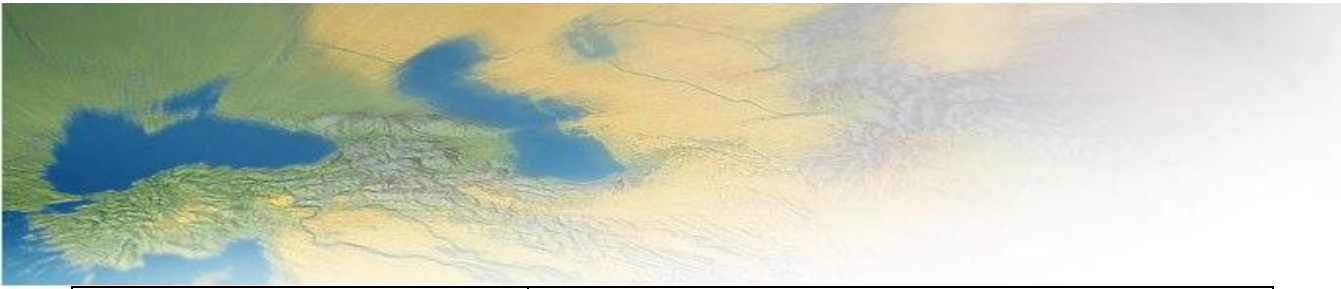
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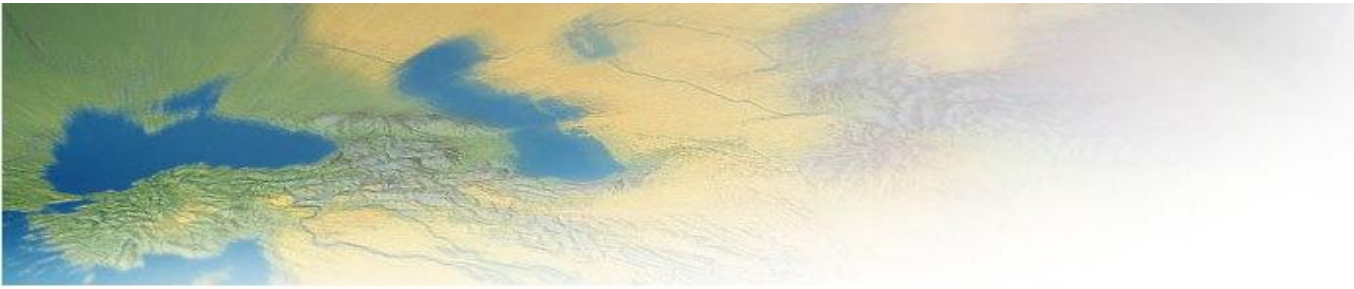


General information about Ukraine:

Official name of the country	Ukraine
Population	The population of Ukraine is 42 973 696 mln people (as for 01 October 2014, temporary occupied Crimea is not included). It is one of the most densely populated countries in Europe, and the average population density is 75,3 persons per 1 sq. km (as for 2014). Ukraine is the fifth in Europe (after Germany, Italy, Great Britain, and France) and 21st in the world in the terms of population. The urban population makes 68%, rural - 32%. Average life expectancy for men is appr. 66 years, for women - 76 years. Ukrainians make 77, 82 % of the total population. 23 % of Ukrainian citizens are representatives of other nationalities: Russians, Belarusians, Moldavians, Bulgarians, Poles, Hungarians, Romanians, Greeks, Tatars, Armenians, Gypsies, Crimean Tatars, Germans and others.
Area	Ukraine is situated in the central part of the Eastern Europe. It borders Belarus, Hungary, Romania, Moldova, Poland and Slovakia. Ukraine has the longest border with Russia. It stretches 893 km from the north to the south, and 1316 km from the west to the east. The country's territory is 603.7 sq. km.
Capital	Kyiv is the largest city and the capital of Ukraine. It is the most significant political, economic, scientific and cultural centre of the country. It is also the centre of Kyiv oblast. The population of Kyiv is 2 868, 7 mln. people (as for 1 January 2014).
System of Government	Ukraine has parliamentary and presidential system of government. The basic principles of the state order in Ukraine are defined by the Constitution of Ukraine - the Fundamental Law, according to which "Ukraine shall be a sovereign and independent, democratic, social, law-based state." According to Article 5 of the Constitution, "Ukraine shall be a republic."
Head of State	President of Ukraine – Petro Poroshenko. The status of the President of Ukraine is defined in Chapter V of the Constitution of Ukraine, which stipulates the rights and responsibilities of the President as the Head of State.
Head of Government	Prime Minister – Arseniy Yatsenyuk
Education & Science Minister	Minister of Education and Science of Ukraine – Sergiy



	<p>Kvit. State Agency on e-Government was established on the basis of the State Agency on Science, Innovation and Informatization of Ukraine and is headed by Oleksandr Ryzhenko</p>
Parliament	<p>The sole body of legislative power in Ukraine is the parliament - the Verkhovna Rada of Ukraine. The constitutional membership of the Verkhovna Rada of Ukraine shall comprise 450 people's deputies of Ukraine elected on the basis of universal, equal and direct suffrage by secret ballot.</p>
Administrative structure	<p>The President of Ukraine is the Head of State. The highest executive authority in Ukraine is the Cabinet of Ministers. It is formed and acts according to the provisions of the Constitution of Ukraine and the Law of Ukraine "On the Cabinet of Ministers". The Cabinet of Ministers is reported to the Verhovna Rada. The Cabinet of Ministers has the Department of Humanitarian Policy which deals with the issues related to science and technology.</p>
Geography	<p>Ukraine is the largest country entirely located in Europe. It represents 5.7% of the total area of Europe and 0.44% of the world's dry land surface. Ukraine stretches 1,316 km from west to east and 893 km from north to south. Ukraine borders with Belarus to the north, Poland to the west, Slovakia, Hungary, Romania and Moldova to the southwest, and Russia to the east and northeast. Its southern territories are washed by the Black Sea and the Azov Sea. Most of the country is flat, with mountains only in its western part, as well as its southern part, the Crimea. These are the Carpathian Mountains and the Crimean Mountains. The highest Ukrainian mountain peak is Hoverla (2,061 m) in the Carpathian Mountains. Ukraine's climate is mainly moderately continental. However, there is a subtropical area in the southern part of the Crimea.</p>



Research structure

Characteristics of the research system

There are 1143 (<http://www.ukrstat.gov.ua/>) research institutions in Ukraine, representing the following sectors of science:

- academic
- field
- industry.

Academic science is presented by the National Academy of Sciences of Ukraine which is the highest state-supported research organisation, enrolling academicians, corresponding members and foreign members and integrates all researchers of its institutions and carries out studies in various branches of knowledge, develops scientific fundamentals for technological, socio-economic and cultural advancement of the nation as well as five field academies of sciences – Ukrainian Academy of Agrarian Sciences, Academy of Medical Sciences, Academy of Pedagogical Sciences, Academy of Legal Sciences and Academy of Arts. Research is also carried out by field institutes, institutions of higher education, industrial research institutes, engineering departments and special engineering bureaux.

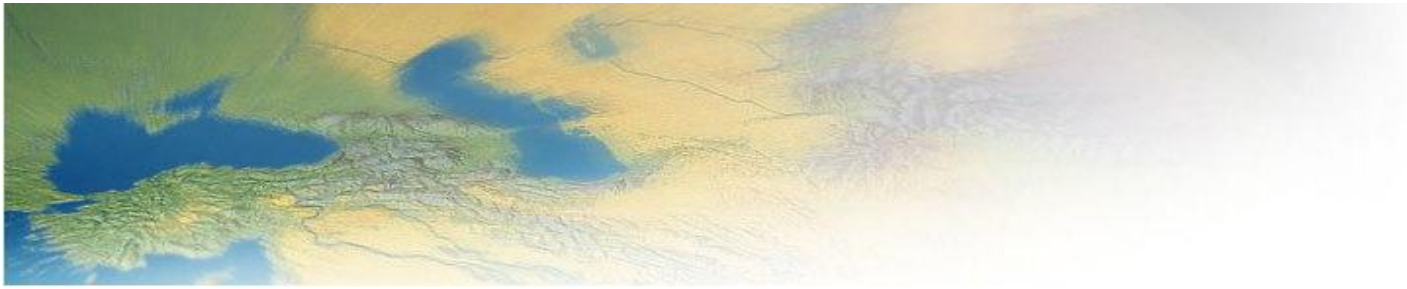
As of 2013, there are 803 universities, colleges and technical schools in Ukraine. The following **universities** make the top five according to the national rating of 2013 conducted by the Project “Top-200 Ukraine”:

- Taras Shevchenko National University of Kyiv;
- National Technical University of Ukraine “Kyiv Polytechnic Institute”;
- Bogomolets National Medical University;
- National University of Kyiv-Mohyla Academy;
- V.N.Karazin Kharkiv National University.

Indicators

Key criteria of science, technology and innovation indicators:

- reflection of the situation in science, technology and innovation in the region
 - provide comparability with international standards
 - management effectiveness in different sectors on different levels
- Key tasks of science, technology and innovation indicators:
- specification of the current science, technology and innovation experience, resources, activities, and related policy making infrastructure
 - identification of national, EU and EECA partners based on current objectives and facilities



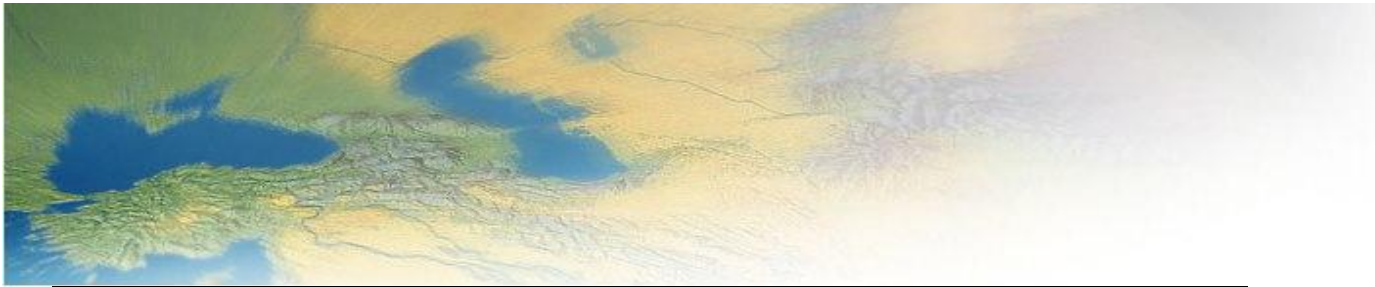
- categorization of the national facilities on their potential for science, technology and innovation cooperation in the current EU-EECA projects and tasks

Below is the table of co-publications with the EU researchers in Ukraine and the EU countries¹

Countries	Total number (Thomson Reuters; 2007) [1]	Part of publications in the world flow, % (Thomson Reuters; 2007) [1]	Total number (Scirus; 2010) [2]	Number of co-publications with the EU (.Scirus; 2010) [2]	Top-groups	
UKRAINE	1847²	0.2	1542	942	-	
Germany	44408	5.9	66669	193	<i>Top 10 25 and more publications</i>	
Poland	7136	0.9	10404	145		
France	30740	4.1	57017	102		
United Kingdom	47121	6.2	82663	80		
Italy	26544	3.5	46357	67		
Spain	20981	2.8	35178	48		
Czech	3689	0.5	5752	39		
Sweden	9914	1.3	16575	30		
Austria	4825	0.6	8763	26		
Netherlands	14210	1.9	29393	25		
Belgium	7071	0.9	13611	24		<i>Top 10+9 More than 10 publications</i>
Bulgaria	801	0.1	1270	21		
Finland	4989	0.7	7798	21		
Greece	4980	0.7	9456	18		
Ireland	2487	0.3	6440	15		
Slovakia	971	0.1	1024	15		
Denmark	5236	0.7	10621	11		
Lithuania	456	< 0.1	648	11		
Slovenia	1280	0.2	1796	11		
<i>Hungary</i>	<i>2452</i>	<i>0.3</i>	<i>3818</i>	<i>8</i>	<i>Less than 10 publications</i>	
<i>Portugal</i>	<i>3424</i>	<i>0.5</i>	<i>7287</i>	<i>8</i>		
<i>Romania</i>	<i>1252</i>	<i>0.2</i>	<i>2541</i>	<i>8</i>		

¹ G.M. Dobrov Center for Scientific and Technological Potential and Scientific Studies of the National Academy of Sciences of Ukraine

² 39 position within 212 countries



<i>Estonia</i>	502	< 0.1	878	7	
<i>Latvia</i>	147	0.0	225	5	
<i>Luxembourg</i>	73	0.0	377	3	
<i>Cyprus</i>	139	0.0	468	1	
<i>Malta</i>	23	0.0	119	0	
European Union countries	245852	32.4	427148	-	-
Other countries	758142	100.0	-	-	-

Reference: [1] "Science and Engineering Indicators 2010". - National Science Foundation (USA). According to Thomson Reuters (SCI, SSCI).
 [2] G.M. Dobrov Center for Scientific and Technological Potential and Scientific Studies (STEPS Centre) of the National Academy of Sciences of Ukraine. Search done using Scirus; done on 07-11.07.2011.

Ukraine's scientific and technical potential data is annually published by the State Committee of Statistics of Ukraine. The data analysis enables both to obtain information on the current status of science and evaluate the effect of science on certain tendencies of the country's social and economic development.

Research performers

The geography of location of the Ukrainian institutions (in %) which conduct research is as follows (as for 2012, current information on Donetsk region can not be updated due to military actions):

Regions:

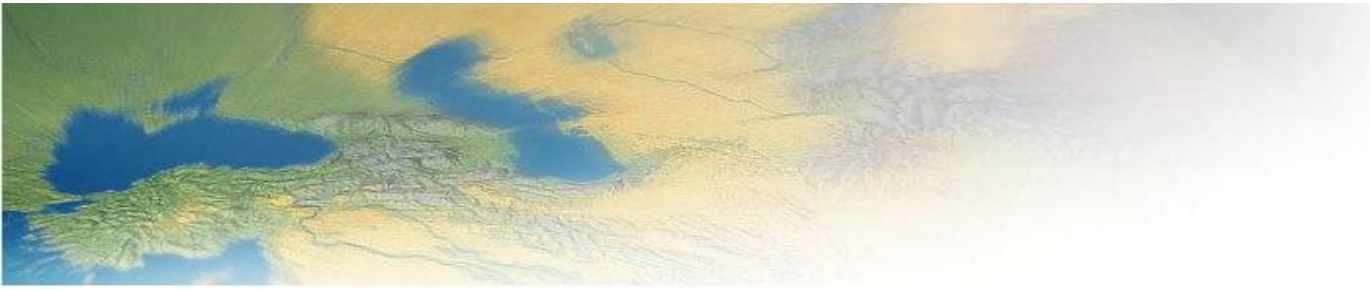
- Kyiv (city) – 26**
- Kharkiv – 16**
- Lviv – 6**
- Dnipropetrovsk – 6**
- Donetsk – 5**
- Odesa – 4**
- Others – 37.**

According to the State Committee of Statistics of Ukraine, the number of the research institutions personnel is 113 454 of whom 4,3% are researchers (as for 2014), and women-researchers make 45,8%.

The statistical data shows that the most number of Ukrainian researchers (more than 42,3%) work in the field of engineering which reflects the traditional direction of Ukrainian science.

The age distribution of Ukrainian researchers is as follows (age vs. number): < 29 – 10461; 30-39 – 15340; 40-49 – 13519; 50-59 – 10813; 60-69 – 9772; 70 > - 5564.

Research funding system



In accordance with the law, science and technology expenditure is a secured line in the State Budget of Ukraine. Scientific studies are funded from the budget pursuant to the basic and programme-oriented procedures. Basic funding is made available to carry out:

- fundamental scientific research;
- research in the most essential for the state directions, including national security and defence RTD;
- development of S&T infrastructure;
- preservation of scientific objects of national property;
- research personnel training.

There are the following sources of funding in Ukraine:

- state budget;
- local budgets;
- non-budget funds;
- own funds;
- final users' funds;
- other sources

The academic and university sectors are mainly funded from the state budget, whereas RTD organizations that associated with industry are funded subject to the agreements with customers. Also in the case of industry sector foreign investments play primary role. During 9 month of 2014 the total amount of expenses for research in Ukraine made 6992. 7 mln UAH (temporary occupied Crimea is not included).

Research policy

Context of research policy

The main S&T coordinating agency in Ukraine is the Ministry of Education and Science of Ukraine; it implements the state policy in the field of scientific, scientific-technological and innovation activities. On the basis of the State Agency on Science, Innovation and Informatization of Ukraine new institution was established - State Agency on e-Government.

The legal basis of the S&T policy in Ukraine is composed of the Constitution of Ukraine and the following Laws of Ukraine: "On Scientific and Scientific and Technological Activities" (adopted in 1991, the last amendments introduced in 2011); "On the Public Forecasting and Development of the Economic and Social Development Programmes of Ukraine" (adopted in 2000); "On Priorities of Science and Technology Development" (adopted in 2001, last amendments introduced in 2010); "On Scientific and Scientific & Technological Examination" (adopted in 1995, last amendments introduced in 2006); "On Scientific and Technological Information" (adopted in 1993, last amendments introduced in 2011); "On Legal Specifics of Functioning of the National Academy of Sciences of Ukraine, Field Academies of Sciences and Their Property Complex" (adopted in 2002, last amendments introduced in 2010); "On



Innovation” (adopted in 2002, last amendments introduced in 2011); “On Scientific Parks” (adopted in 2009, last amendments introduced in 2010); “On the National Programme of Information” (adopted in 1998, last amendments introduced in 2010); “On State Regulation of Actions in the Technology Transfer Field” (adopted in 2006, last amendments introduced in 2011); “On Priorities in Innovation Activities in Ukraine” (adopted in 2011).

Research policy: objectives and priorities

The Law of Ukraine “On Priorities of Science and Technology Development” defines the following national priorities up to 2020:

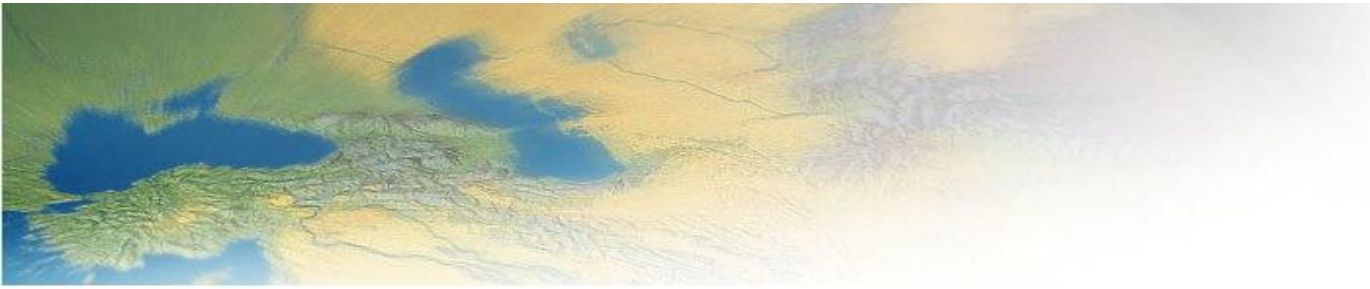
- basic scientific research of the most important problems of scientific and technological, social and economic, political and human potential development to ensure Ukraine’s competitiveness in the world and sustainable development of its society and state;
- information and communication technologies;
- energy and power efficiency;
- efficient nature management;
- life sciences, new technologies of prevention and treatment of the most wide-spread diseases;
- new substances and materials.

The S&T priorities are defined according to the National Target S&T and Innovation Development Forecast Programme of Ukraine. They are discussed by the scientific community and submitted by the Cabinet of Ministers of Ukraine to Verkhovna Rada of Ukraine for correction.

According to the a/m Law of Ukraine, on September 07, 2011, the Cabinet of Ministers of Ukraine adopted a Resolution “On Approval of the List of Priority Thematic Directions of Scientific Research and Science and Technology Designs for the period up to 2015”.

The Law of Ukraine “On Priorities in Innovation Activities in Ukraine” defines the following strategic innovation priorities for the period 2011-2021:

- assimilation of new technologies of energy transportation, putting into operation of energy-efficient and resource-saving technologies, assimilation of alternative sources of energy;
- assimilation of new technologies of high technology development of the transportation system, rocket and space field, aircraft industry and shipbuilding, armament and military technologies;
- assimilation of the new technologies of materials production, their processing and interconnection; creation of the nano-materials and nano-technologies industry;
- technological modernization and development of agro-industrial complex;
- introduction of new technologies and equipment for a quality medical service, treatment and pharmaceuticals;
- wide use of technologies of cleaner manufacturing and environment protection;
- development of modern information and communication technologies and robotics.



National and bilateral S&T programmes

Below is the list of some national and state S&T (or S&T related) programmes of Ukraine:

- National Programme of Information (started in 1998; the end year is not specified);
- National Programme of SME Support in Ukraine (started in 1998; the end year is not specified);
- National Programme of Establishing of the National Ecology Network for 2000-2015;
- State Programme “Drinking Water of Ukraine” for 2006-2020;
- State Target Economic Programme of Power Efficiency for 2010-2015;
- State Target S&T Programme “Nanotechnologies and Nanomaterials” for 2010-2014;
- State Target Ecological Programme On Developing Secure Conditions at the Uranium Objects of the Production Enterprise “Pre-Dnipro Chemical Plant” for 2010-2014;
- State Target Programme on Closing Production and Use of the Ozone Depleting Substances for 2004-2030;
- State Target Programme on Utilization of the Liquid Missile Fuel for 2010-2014;
- State Target Programme “Forests of Ukraine” for 2010-2015;
- State Target S&T Programme on Research in Antarctic for 2011-2020;
- State Complex Programme on High Scientific Technologies Development (started in 2004; the end year is not specified);
- State Target S&T Programme “Development and Implementation of Energy-Saving LED Light Sources and Lighting Systems” (started in 2008; the end year is not specified);
- State Programme on Adaptation of Ukrainian Legislation to EU Legislation (started in 2004; the end year is not specified);
- State Programme on City Electro Transport Development for 2007-2015;
- State Programme to Combat Cancer up to 2016;
- State Programme “Reproductive Health of the Nation” up to 2015;
- State Target Programme on Railway Transport Reform for 2010-2015;
- State Target Economic Programme “Nuclear Fuel of Ukraine” (started in 2009; the end year is not specified).

International co-operation in research, science and technology

Scope and objectives

Ukraine has implemented extensive scientific and technology cooperation with the countries of the world to raise the quality of the national scientific research and technologies that are produced basing on this



research as well as integration of the Ukrainian scientific potential into the European and world research areas. The foreign policy of Ukraine is to ensure support of the Ukrainian science, culture and education and saving of intellectual potential as well as full value development of all fields of the Ukrainian culture, acceleration of the national renaissance and development of free cultural and humanitarian exchange with the countries of the world.

The legislation of Ukraine provides favourable conditions for international science and technology cooperation.

Thus, in particular, the Law of Ukraine “*On Science and Technology Priorities*” (with amendments of 2010) defines legal and organizational principles of the complex system of formation and implementation of the science and technology priorities in Ukraine for the period up to 2020.

Co-operation with EECA countries

Ukraine concluded agreements on science and technology cooperation with 11 EECA countries: Azerbaijan, Armenia, Belarus, Georgia, Moldova, Russia, Kazakhstan, Kyrgyz Republic, Tajikistan, Turkmenistan and Uzbekistan. The agreements define specific areas in which scientific potential on the bilateral level can be used most effectively.

Co-operation with EU-member states and associated countries

The policy drive for the EU-Ukraine science and technology co-operation includes the following:

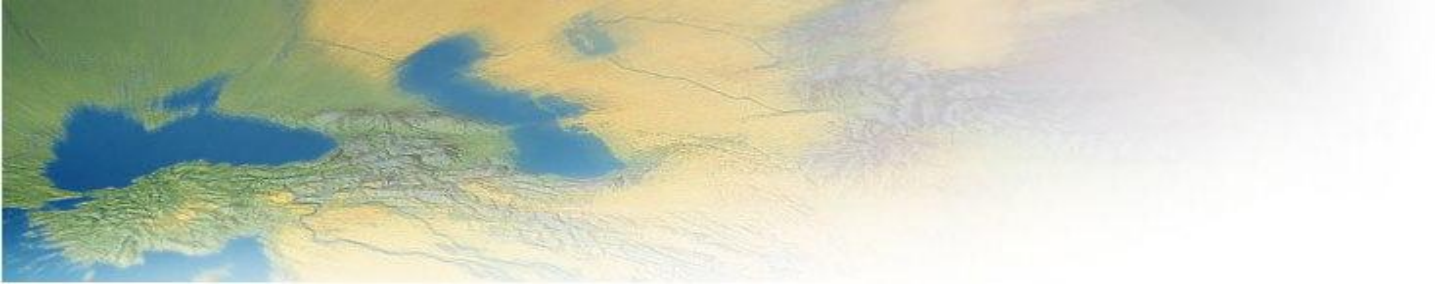
- European Neighborhood Policy
- EU-Ukraine Association Agreement
- Agreement on Scientific and Technological Cooperation

The current legal basis of the EU-Ukraine relations is laid down by “The Partnership and Co-Operation Agreement between the European Communities and Their Member States and Ukraine” from 14 June 1994 (in force since 1 March 1998), which initiated the cooperation on political, economic and trade, and humanitarian issues.

The Law of Ukraine “*On Ratification of the Agreement by Exchange of Notes on Renewal of the Agreement on Scientific and Technological Cooperation between the European Community and Ukraine*” was adopted in November 2011. The agreement renews the Agreement of July 4, 2002 signed in Copenhagen, which confirms importance of science and technology for the economic and social development of both Parties.

Association Agreement includes the part related to science and technology which provides for the following:

- renew and activate the EC-Ukraine S&T cooperation agreement, in order to enhance the participation of Ukrainian research entities in Framework Programme;
- use the available tools (S&T agreement, INCO-Nets) in order to prepare for a possible association of Ukraine to the Research Framework Programme;
- Ukraine to promote the activities of the ICT National Contact Points and involve the private sector in the research cooperation.



Ukraine has S&T cooperation agreements with more than 50 countries, including the EU member-states and associated states. In particular, there are intergovernmental S&T cooperation agreements with the following 17 EU countries: Austria, Bulgaria, Germany, Estonia, Finland, France, Greece, Hungary, Italy, Latvia, Lithuania, Poland, Portugal, Romania, Slovakia, Slovenia, Spain.

*Source: The National Information Centre for Ukraine-EU S&T Cooperation (NIP)
180 Gorkiy street
Kyiv, 03680 Ukraine*
