



**SYNERGING
ENERGIES**



*This workshop
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The NATO Science for Peace
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Centre for Global Studies Strategy XXI

The impact of Russian aggression against Ukraine and its effects on CEI

Mykhailo M. Gonchar, President,
Tbilisi, December 5, 2016





Centre for Global Studies 'Strategy XXI' is a think tank that specializes in energy and energy security studies basing on multidisciplinary approaches.

Centre is a partner of NATO Energy Security Center of Excellence since 2015

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SYNERGING



ENERGIES

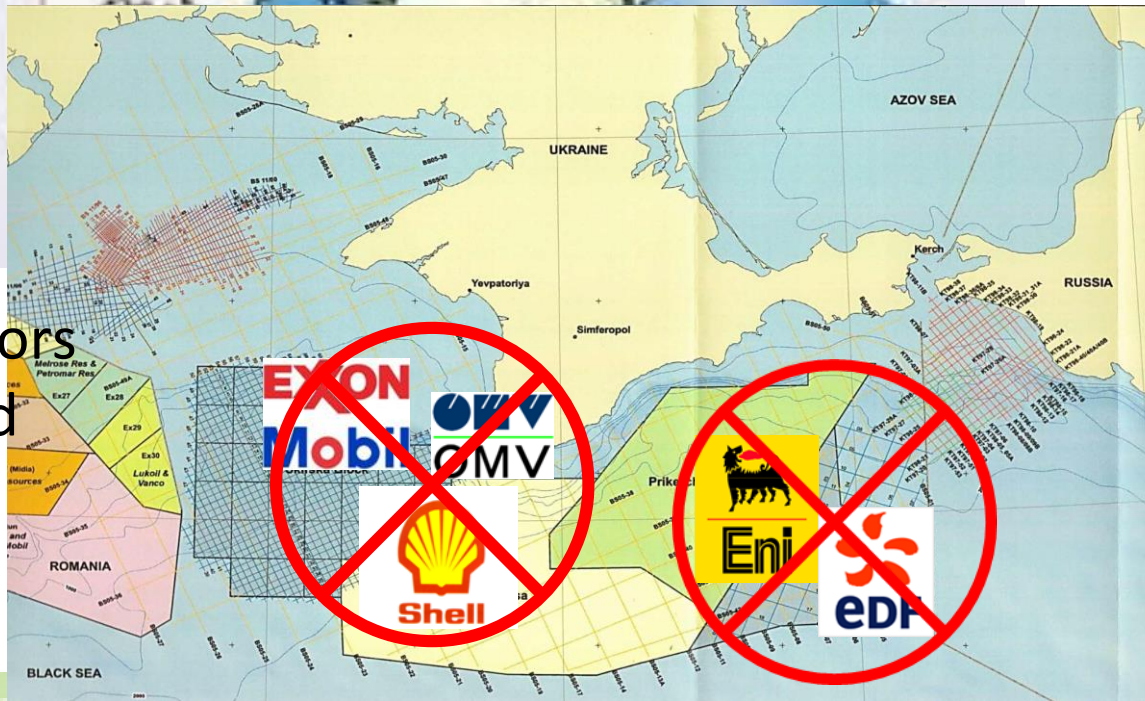
Drilling and extractive platforms of Ukrainian state-owned company NaftoGaz on the Black Sea shelf were occupied by “little greenmen” in March 2014



The Kremlin's strategic plan against Ukraine and the Western majors in energy sector:

removing Western competitors of the Russian state companies, creating unacceptable high military and political risks in the area of prospective production of conventional and unconventional hydrocarbons in the south and east of Ukraine, in particular, in the Black Sea shelf area around the Crimean peninsula.

Four promising E&P projects were established during 2012-2013 by American and European majors for 50-years period



ГАЗОТРАНСПОРТНА СИСТЕМА УКРАЇНИ

System of Ukraine:

- 38 550 km pipelines,
- 72 gas compressor stations,
- 1 455 gas distribution stations,
- 13 underground gas storages (UGS)



Карта-схема магістральних електричних мереж ОЕС України

- [illegible]

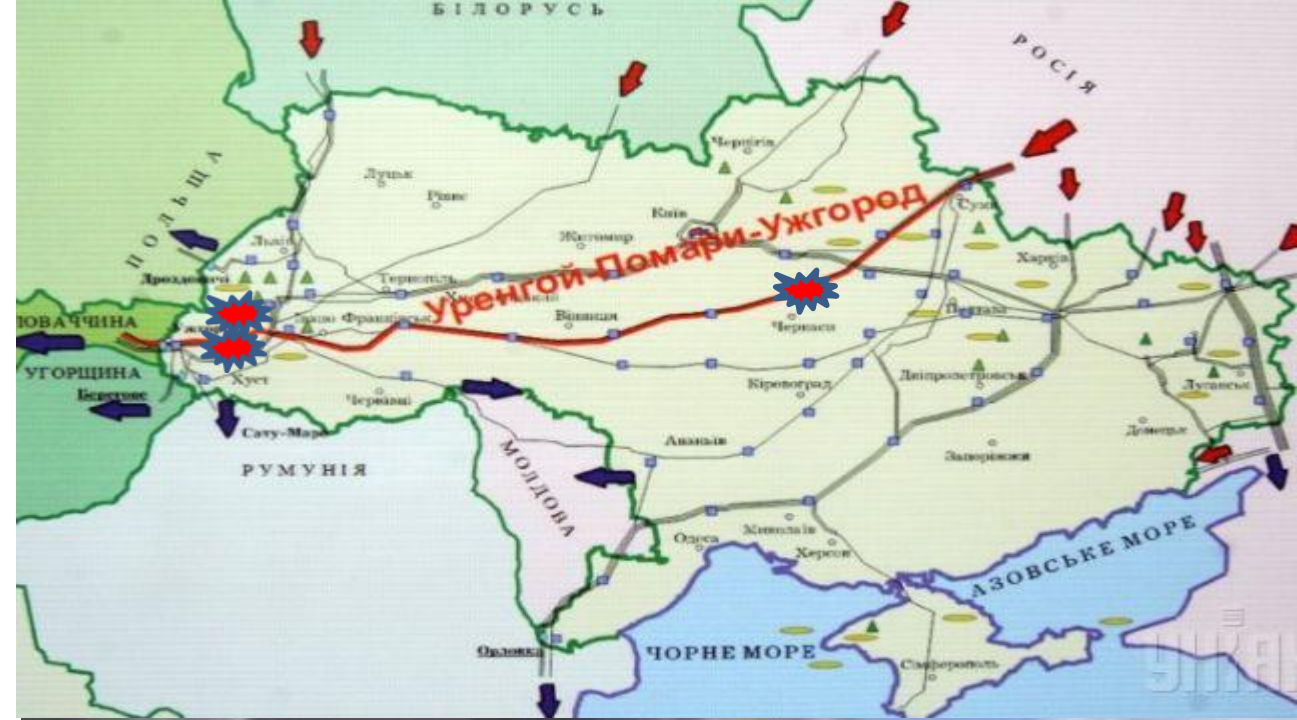


Subversive attacks on the main transit pipeline UPU:

- 2 explosions on May 12, 2014 – Ivano-Frankivsk region,
- 1 explosion on June 17, 2014 – Poltava region.

Damages of local gas distribution networks:

Gas distribution networks located in the battle areas suffered 31 breakdowns. Functionality had been renewed after repair works in 21 cases; In 10 cases, it was impossible to repair wrecked objects.



Targets:
smoke pipes of Thermal Power Plant
and coolers of Nuclear Power Plant

градирни АЭС

альтернативная цель - дымовые
трубы ГРЭС



The major UA power plants in Energodar were identified by separatists in 2014 as the targets for the fire attacks and subversions



«Russian Spring 2014». Main recommendations from Russia for paramilitares in the framework of "Novorossiya Project" concerning throw-down of energy infrastructure of Southern Ukraine:

Under the offensive scenario, air strikes on the major power generation objects were suggested (unguided surface-to-surface missiles, artillery, UAV).

Under the scenario of the hidden sabotage actions, it was suggested disabling of the water supply system, designed to cool energy units of the NPPs.

Under the cyber-scenario, the cyber-attacks on the operation dispatching system of the IPS of Ukraine were suggested



An expected outcome would have been a failure of the whole energy system with its further blackout.

December 23, 2015: Black Energy Trojan had been placed in the letter, which Ukrzaliznytsia received with recommendations for security allegedly sent by the Ministry of Industrial Policy

От: Міністерство промислової політики України <info@industry.gov.ua> (Міністерство промислової політики України)

Кому: proe@oe.if.ua

Тема: Рекомендації з безпеки

Письмо.html 1 Кб

список паролів.zip ~64 Кб

У зв'язку з виявленням небезпечної уразливості у серверах, на яких працюють поштові служби та сайти державних органів влади усім співробітникам потрібно змінити паролі до пошти та інших служб.

У додатку список з небезпечними пароллями. Якщо Ви знайшли свій пароль у цьому списку, його треба змінити.

Відділ інформаційної безпеки

Міністерства промислової політики України

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вул. Сурикова, 3
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January 20, 2016:
The Excel-file, which contained a Trojan program on open source was sent on behalf of the national operator Ukrenergo.

Оцінка структури генеруючих потужностей та потреб в її оптимізації

ОЕС України об'єднує в паралельну роботу теплові, атомні, гідрравлічні, вітрові та сонячні електростанції сумарною встановленою потужністю, яка станом на 31.12.2015 року складатиме 55 468 МВт (без енергогенеруючих об'єктів ВЕС «Крим»), у тому числі:

Структура генеруючих потужностей ОЕС України станом на 31.12.2015, МВт:

ТЕС ГК

ТЕЦ, блок станції та інші джерела

ГЕС

ГАЕС

АЕС

Електростанції на альтернативних джерелах енергії

1 168
2,1%

13 835

Microsoft Office

Увага! Цей документ був створений у більш новій версії Microsoft Office™
Макроси потрібно включити для відображення вмісту документа.

Dynamics of Ukrainian gas sector: reduction of the consumption and import; gas supply from the EU, zero gas from Russia

Years Indicators	1995	2005	2011	2012	2013	2014	2015	<i>2016 projection</i>
Consumption, <i>bcm</i>	85.4	76.4	59.3	54.8	50.358	42.5	33.727	~29,7
Production, <i>bcm</i>	18.1	20.5	20.6	20.2	20.998	20.5*	19.896*	~20.2*
Import, <i>bcm</i>	66.3	57.6	44.8	32.9	27.974: 25.842–RU 2.132–EU	19.6: 14.450–RU 5.016–EU	16.442: 10.302–EU 6.140–RU	~9.5: 9.5 –EU 0,00–RU

*** without Black Sea Shelf offshore production where Russia steals ~1.6 bcm annually**

SOME CONCLUSIONS:

1. Critical energy infrastructure of Ukraine preserved its functionality, and parts, captured by Russian military forces and separatists' units, are not a fatal.
2. Attempts to conduct subversive attacks and cyber-attacks against critical infrastructure units in Ukraine during the 33 months of the war have no success and were stopped by counteractions of Ukraine's side.
3. Russia activates cyber-attacks with the aim to provoke blackout of the IPS of Ukraine and severe errors in the functionality of Ukraine's GTS with the aim to generate largescale gas crisis in Europe and blackmail Ukraine in it with following pressure on the EU to support Nord Stream II gas project.
4. Hybrid warfare platform under umbrella UA-NATO Joint Commission is established. Ukrainian Government considers joining to the NATO CoE, first of all to the Energy Security CoE.
5. NATO should strengthen its intelligence capacities and CoE (Cyber Defense, StratCom and Energy Security) with regard to potential of the RF to generate hybrid threats.
6. Analysis of Russian hybrid war against Ukraine makes evident, that Russia will activate subversions against Europe in different sectors, in particular, through largescale cyber-attacks. Massive cyber-attacks are possible during this winter against energy networks in the EU.
7. More securitization of the S. Caucasus, Caspian and C. Asian regions is needed to provide protection of the future gas flows to Europe.

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**Hybrid war in Eastern Europe.
Non-military dimension.
Energy component.**



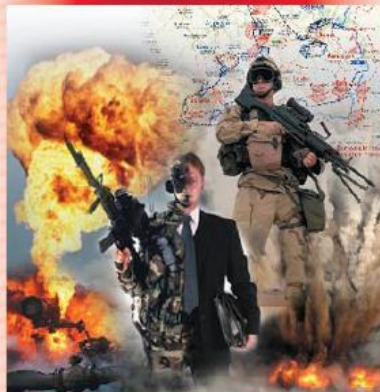
Kyiv
November 2014

CENTRE FOR GLOBAL STUDIES 'STRATEGY XXI'



ANTARES PROJECT

**ENERGY COMPONENT IN
NEW GENERATION WARFARE**



**Case of Russia's Hybrid Aggression
against Ukraine.**

Kyiv
August 2015

ЦЕНТР ГЛОБАЛИСТИКИ «СТРАТЕГИЯ XXI»



**ГИБРЕССИЯ ПУТИНА.
НЕВОЕННЫЕ АСПЕКТЫ ВОЕН
НОВОГО ПОКОЛЕНИЯ**



Фрагменты исследования
в рамках проекта «Антарес»

Київ
Фебруарь 2016

**Thank you for
attention!**

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