Russian Energy in the Modern World

A New Approach to a Changing Global Environment



A Learning Module

Developed by the Center for Global Studies and the Russian, East European and Eurasian Center at the University of Illinois at Urbana-Champaign

> *"Russia: Friend or Foe?"* Peoria Area World Affairs Council Annual Conference February 23-24, 2007



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Background History

Russia occupies the largest geographic space of any country in the world. It currently has a population of about 150 million people. Often, Russia and the Russian government are referred to with terms such as "Moscow" and "The Kremlin," much like the terms "Washington" and "Capitol Hill" are used to indicate the United States and its government. Fifteen years ago, Russia was only one of many states within the Soviet Union, which was considered an enemy of the United States and Western Europe during the Cold War. Today, some of the former member states of the Soviet Union maintain an economic union, which is called the Commonwealth of Independent States (CIS).

The Cold War was a period of direct and indirect conflict between the Soviet Union and the West – between communism and capitalism – from 1947 through 1991. This conflict was entirely new in world history, because the accumulation of nuclear weapons by both sides directly threatened the future of the planet. Due to the extremely high cost of a nuclear confrontation, this conflict stayed "cold," and it was played out in a series of smaller, regional conflicts, as the United States, Europe, and their allies vied against the Soviet Union, China, and their supporters to influence the fate of other nations and indirectly harm their ideological rivals. The Korean War, Vietnam War, and the Russian War in Afghanistan are examples of confrontations during the Cold War.

Formed in the early years of the Cold War, the North Atlantic Treaty Organization (NATO) was a military alliance among the United States, France, Great Britain and other Western European countries. The goal of NATO was to provide collective security to all members to defend against the overwhelming military might of the Soviet Union and its supporters. Even though the Cold War ended with the disintegration of the



Soviet Union, NATO still exists today and continues to attract new members, which Russia continues to see as a military threat to its security.

The European Union (EU) is a massive political and economic organization that evolved from well-established agreements between countries in Western Europe. With the dissolution of the Soviet Union and the establishment of democratic governments in Central and Eastern European countries, the EU continues to expand and now includes over twenty-nine countries and a population of nearly 500 million. The combined economic power of the EU is a real rival to the United States. The organization has common policies in the areas of economics, social welfare, environmental controls, foreign policy, and justice. Although the EU is the largest customer of Russian oil and natural gas, there is no common energy policy.





Section One

Russian Energy in the Modern World

A New Approach to a Changing Global Environment

What first pops into your mind when you think of Russia: Vodka? Concrete walls? Snow and ice? The Cold War? Communism? These old stereotypes represent an older incarnation of Russia, but modern Russia is represented by something entirely different–energy resources. Today, energy resources are growing in worldwide demand, but supplies are shrinking, which makes finding and developing new, untapped sources of fossil fuels essential. Russia has the most desirable reserves of oil and gas in the world, and it has the capability to harvest, refine and sell them. In fact, for most of the developed world, there is no way to meet a nation's energy needs without going through Russia.

Fossil Fuels

Fossil fuels are the most important source of energy in the world. They have fueled the developed world for nearly 250 years, since the beginning of the industrial revolution. This category consists of coal, oil and natural gas.

Coal: Coal is a solid form of fossilized tree, which is often used in both heating purposes and for power generation. It was once the most important fuel of the industrialized world, but it has been reduced in use due to extremely high levels of pollution and inefficiency.

<u>**Oil**</u>: Oil is the most widely used fossil fuel in the world. It can be refined into thousands of different substances, including vehicle fuel, industrial chemicals and plastics. Oil is located in a few particular areas in large quantities, such as the Middle East and Russia. Due to its natural liquid state, oil can be easily shipped by tankers, pipelines, trucks or rail.

Natural Gas: (Sometimes referred to as just "gas," not to be confused with petroleum). Natural gas is a form of fuel, which is most commonly used for heating purposes. This fuel is found in only a few parts of the world in large quantity, such as in Russia, Iran and the United States. The fact that this fuel is a gas makes it difficult to transport, requiring massive transportation pipeline networks or high-technology, high-cost liquefaction terminals.



Energy

The Russian energy industry is vast and imposing. Currently, Russian energy is a fixture in the global economy, supplying Europe, Asia, and North America with natural gas, oil and some nuclear fuel. Russia boasts the world's largest reserves of natural gas, and the third largest reserves of crude oil. Russian oil production is second only to Saudi Arabia, and Russian natural gas production is greater than the second and third highest producers' output combined. Because of rising instability in the Middle East, and the volatile international oil market, such high levels of production make Russia an attractive energy partner for many nations. This market appeal, combined with a historically high price for oil, has led to the economic revitalization of the former world power. It seems like a strange coincidence that the nation that once led the charge against capitalism during the Cold War has reinvented itself as a vital supplier of energy to voracious Western economies.

The current state of Russian energy is not ideal. Although total Russian energy production is high, production standards are low. Most of Russia's natural resources are only partially harvested, wasting as much as 60% of the natural gas and oil available. Furthermore, the Soviet-era pipelines that transport what little fuel is harvested are terribly out of date and unreliable. Some areas of western Siberia and European Russia are considered to be ecological disasters, with huge "oil-swamps" appearing from leaking pipes and oil tanks. Russian companies have made attempts to address this problem, but no real solution has appeared. In fact, the cost of repairing all of the oil pipelines in the country is higher than the value of either of the companies that use them.

For reinvigorated Russia, energy is by no means a purely market matter. For the last few years, the Russian government has centralized national energy assets by using the federal budget to buy a majority share in major companies or making sure the



leadership of those companies is loyal to the policies of the state. In this new,

centralized Russian energy sector, three major state corporations reign supreme:

Rosneft (oil production), Transneft (oil transportation), and Gazprom (natural gas

production and transportation.

Russian Energy Corporations



Gazprom: Gazprom is the most powerful natural gas company in the world. It was formed from the old Soviet natural gas industry and currently is controlled directly and indirectly by the Russian government. Although it is a large, unwieldy and very slow-moving company, Gazprom supplies most of Europe and the CIS with nearly all of their natural gas. Often, Gazprom has been accused of using its untouchable role as the main gas supplier to both Europe and the CIS as a means of exploiting its customers for the political goals of the Russian government.



Rosneft: Rosneft is the largest oil exporting company in Russia. It is involved with oil exploration, oil drilling, oil refining and oil export. Unlike Gazprom, Rosneft does not own many of its own pipelines. Rosneft recently has been criticized for profiting from government seizures of private companies, like Yukos, which was once the largest oil company in Russia. In an attempt to reverse this perception and become more profitable, Rosneft opened to private investment in 2006.



Transneft: Transneft owns almost all the oil transportation pipelines in Russia. This gives the company control of the largest network of oil pipelines in the world, stretching over 31,000 miles. Transneft has been accused of using its oil pipelines to exclude other regional sources of oil. Since almost all oil-producing nations near Russia need to use Transneft's pipelines in order to supply any customers, Transneft can exclude its competitors or extort them to pay exorbitant transport fees.



These massive corporations supply the international community with energy and offer special discounts to Russian customers. This low local cost of energy can be seen as a very dangerous incentive to pollute, because there is no incentive to increase energy efficiency. However, with Russia's enormous reserves of energy and its unparalleled production, efficiency is not necessary to ensure incredible profits.

Politics

In the modern world, energy is not only an economic matter. For many nations, the ability of a state to compete in the international community, or even continue to survive, depends a great deal on access to affordable energy resources. For many Western countries, especially those in Europe and North America, the amount of energy consumed is far, far higher than the amount of energy produced. This situation creates a vulnerable position for most developed nations, which rely on other nations to provide their "strategically significant" vital supplies. In order to both protect a nation's security and its economy, the idea of "energy security" has emerged–states not only need to protect their borders and citizens, but also their supplies of oil and gas. Any major disruption in these strategically significant supplies could be enough to threaten any nation's viability, but a diversity of nations supplying resources helps make up for the shortcomings of any one partner.

The high significance of Russian energy emerges when one begins to examine just how dependent some nations are on Russian oil and natural gas. The United States is a good example of a nation with a diversified supply of oil. It imports energy from several Middle Eastern countries, several South American countries, Mexico, Canada, Africa, and there is some production within the U.S. By contrast, for many nations in Europe, more than half their energy imports come from Russia, and a few nations depend on Moscow for as much as 95% of all their energy resources. This situation could be considered risky should the Kremlin ever change its policy toward its



Western neighbors. Should Russia stop the flow of oil, European nations could buy more on the international oil market at higher prices. But, if the natural gas supply was cut off, then the European Union's economy would grind to a halt. It is impossible to replace natural gas supplies, because gas is transported via pipelines; it cannot be put into barrels and shipped around the world. Thus, there is no international natural gas market. So, should Russia cut off the flow of natural gas to the European Union, there would be a crippling energy crisis.



The Russian government certainly has the potential to change the Western world's energy supply, but is it willing to do so? The short answer is yes and no. The Russian government has a history of manipulating energy supplies, with examples in Ukraine, Belarus, Lithuania and Georgia. In each of these countries, the Russian government threatened to shut off all natural gas supplies unless their demands were



met. In Georgia, as relations worsened over an old territorial dispute, Gazprom cancelled gas supplies in winter 2006. In Ukraine, a price dispute was very much on the minds of the Kremlin's elites, but many Western observers thought it was no mere coincidence that the pro-Western, anti-Russian government took control right before shipments of gas to Ukraine were cancelled. Belarus faced a similar situation in the winter of 2006-2007, but its politics have always been in line with Russia's. Although this behavior may seem more like tough bargaining than geopolitical revenge, it has provoked such a serious reaction in the West that NATO has begun to direct its policies toward protecting energy supplies as well as ensuring traditional collective security. It seems that old Cold War notions may not be so far off after all.

Even though the Kremlin holds a lot of the cards in the international energy game, the Russian federal budget depends on energy sales. The Russian budget is almost entirely supplied by taxes on government-run oil and gas companies and its own share of the profits. It is said that in Russia, no one pays their taxes honestly—as long as oil and gas continue to sell, they don't have to. Russia cannot afford to harm another nation by withdrawing its oil and gas without jeopardizing its own income. It would be ridiculous to believe the federal government of Russia would willingly sacrifice its entire budget this way. In reality, confrontations about gas supply have rarely gone past threats: supplies were seldom cut off. However, as Russia's income grows with the addition of new customers, its ability to limit its own damage increases as well. Thus, this energy supply relationship could become an economic race to the bottom for the European Union and Russia. One side is striving to diversify its client base, while the other is seeking to find valuable, new sources of energy. The profits to be made from cooperation, however, are absolutely astounding.



Future

In coming years, Russian energy resources will grow in global significance. As Russian natural gas becomes more available to Europe and Asia via new, modern pipelines, exports of natural gas will become a fixture on the international scene. Furthermore, as new technology is gradually incorporated into Russian energy projects, efficiency will improve. Increased energy production will go hand-in-hand with global energy demand, which is expected to continue to increase for the foreseeable future. This trend, combined with the gradual exhaustion of older, established energy sources, will slowly push Russia toward the center of the supply network for global energy resources. As long as the world continues to rely on fossil fuels, it will continue to rely on Russia.



Section Two

Classroom Activities

Russian Energy Wordfind Exercise

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Α	R	D	R	S	Α	G	L	Α	R	U	Т	А	Ν	А	R	Е	Ν	Α	J	Н	А	Ι	Η	Е
G	Ν	U	С	L	Κ	Е	Α	R	В	L	А	Κ	В	Α	L	G	Р	Е	R	S	Ν	Т	Ν	G
Ι	Е	Α	D	Ν	0	S	R	Ζ	0	Е	R	R	Α	В	0	D	Μ	R	D	Y	L	Ι	Η	Α
Ν	Т	0	Α	R	J	Р	Е	D	Р	Е	Μ	Е	S	Т	С	0	0	Μ	Ι	Ν	L	L	Ν	G
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V	Α	Ι	V	L	Μ	Е	D	D	L	0	0	В	D	R	Р	Ι	0	Ν	Р	Е	Ι	Р	Р	Е
J	U	S	W	В	Ι	V	R	Μ	S	S	Ν	М	R	А	U	Т	Ν	Ι	Р	Ν	Е	S	Е	R
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0	0	L	С	R	Ι	R	Т	Μ	L	Т	R	Α	Ν	R	Α	Е	W	Т	S	Е	Μ	Α	S	С
Α	F	Е	L	Е	Е	Е	Р	Μ	А	W	S	L	Ι	0	Р	G	S	S	R	D	L	S	D	Е
В	Α	В	G	В	S	Т	U	Α	L	В	Ν	Е	L	0	Ν	S	Ι	Α	Е	R	Ι	D	S	R
Α	R	С	Ι	Y	Α	Ν	Е	Ν	Т	G	Р	J	R	V	Х	Α	D	Μ	Ν	Α	Ν	0	Р	М
R	Е	S	0	Т	В	Κ	F	L	Ν	Е	С	U	G	Е	Ι	R	Т	Е	W	R	Е	Μ	S	S
Е	Ι	0	F	Е	S	U	Ν	Α	Т	0	Е	Ζ	D	L	Ν	F	R	R	Р	D	L	J	0	Α
Κ	0	Μ	Ι	Ν	Т	Е	R	Ν	Е	R	Ν	R	0	Y	L	А	Р	0	U	Ν	S	Е	Р	Р
Α	R	0	Ι	Т	Κ	Е	Ν	Е	R	G	Y	S	Е	С	U	R	Ι	Т	Y	Α	D	0	Ι	L
Η	L	S	Ι	D	U	Α	Е	0	С	Ι	S	С	D	Y	L	L	W	0	L	Е	L	S	Е	Q
0	Е	Κ	L	Q	Α	Т	Η	Р	R	А	Е	Ι	0	Е	Η	А	F	Μ	0	S	С	0	W	Α
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Gazprom	China	Kremlin	Moscow
Rosneft	LNG	Putin	Politics
Transneft	Embargo	Ukraine	European Union
Dependence	Natural Gas	CIS	NATO
Oil	Georgia	Vladimir	Belarus
Pipeline	Oil Swamp	Siberia	Energy Security
Russia			Energy Resource



Russian Energy Wordfind Answers

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Ζ	Р	J	0	Μ	E	Α	Ι	S	Т	Α	S	Е	E	Т	E	Ν	L	Α	E	C	R	S	Ι	Р
Ι	Y	Т	Α	С	E	S	0	Р	E	W	Ν	F	R	Т	Κ	С	E	Μ	Т	Α	Η	С	0	В
А	R	D	R	S	Α	G	L	Α	R	U	Т	Α	Ν	Α	R	E	Ν	А	J	Η	А	Ι	Η	E
G	Ν	U	С	L	Κ	Е	Α	R	В	L	А	Κ	В	А	L	G	Р	E	R	S	Ν	Т	Ν	G
Ι	E	Α	D	Ν	0	S	R	Ζ	0	E	R	R	А	В	0	D	Μ	R	D	Y	L	Ι	Η	Α
Ν	Т	0	Α	R	J	Р	Е	D	Р	Е	Μ	Е	S	Т	С	0	0	Μ	Ι	Ν	L	L	Ν	G
Κ	G	Т	Р	E	Ν	Ε	R	G	Y	R	Е	S	0	U	R	С	E	J	S	E	Ε	0	W	W
V	Α	Ι	V	L	Μ	Е	D	D	L	0	0	В	D	R	Р	Ι	0	Ν	Р	Е	Ι	Р	Р	Е
J	U	S	W	В	Ι	V	R	Μ	S	S	Ν	Μ	R	Α	U	Т	Ν	Ι	Р	Ν	Е	S	Е	R
0	Η	U	Α	R	Q	Т	Т	R	Α	Ν	S	Ν	Ε	F	Т	S	Р	Е	U	R	Κ	S	0	D
U	Κ	R	Α	Ι	Ν	E	Ι	Α	Μ	Е	Е	Т	R	U	Ι	L	0	Ν	Α	С	R	Е	Η	L
R	G	Α	G	Κ	S	R	Ι	Κ	R	F	W	Р	А	Ν	Ν	R	Α	Α	R	U	Е	Μ	J	0
0	0	L	С	R	Ι	R	Т	Μ	L	Т	R	А	Ν	R	Α	E	W	Т	S	Е	Μ	Α	S	С
Α	F	Е	L	Е	E	Е	Р	Μ	Α	W	S	L	Ι	0	Р	G	S	S	R	D	L	S	D	Е
В	Α	В	G	В	S	Т	U	А	L	В	Ν	Е	L	0	Ν	S	Ι	Α	Е	R	Ι	D	S	R
А	R	С	Ι	Y	Α	Ν	Е	Ν	Т	G	Р	J	R	V	Х	Α	D	Μ	Ν	Α	Ν	0	Р	Μ
R	Е	S	0	Т	В	Κ	F	L	Ν	Е	С	U	G	Е	Ι	R	Т	Е	W	R	Е	Μ	S	S
Е	Ι	0	F	Е	S	U	Ν	Α	Т	0	Е	Ζ	D	L	Ν	F	R	R	Р	D	L	J	0	Α
Κ	0	Μ	Ι	Ν	Т	Е	R	Ν	Е	R	Ν	R	0	Y	L	А	Р	0	U	Ν	S	Е	Р	Р
А	R	0	Ι	Т	Κ	Е	Ν	Е	R	G	Y	S	Е	С	U	R	Ι	Т	Y	Α	D	0	Ι	L
Η	L	S	Ι	D	U	Α	Е	0	С	Ι	S	С	D	Y	L	L	W	0	L	Е	L	S	Е	Q
0	Е	Κ	L	Q	Α	Т	Н	Р	R	Α	Е	Ι	0	Е	Η	А	F	Μ	0	S	С	0	W	Α

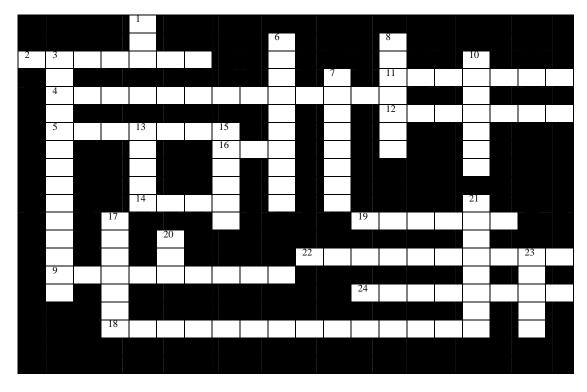
Gazprom
Rosneft
Transneft
Dependence
Oil
Pipeline
Russia

- China LNG Embargo Natural Gas Georgia Oil Swamp
- Kremlin Putin Ukraine CIS Vladimir Siberia

Moscow Politics European Union NATO Belarus Energy Security Energy Resource



Crossword Puzzle



Down

Across

- **1.** Abbreviation for liquefied natural gas
- **3.** The political idea of protecting a nation's energy supply
- 6. A fossil fuel, sometimes simply called "gas"
- 7. A kind of swamp created from leaking oil pipes and tanks
- 8. Russia's largest oil company
- **10.** Russia's western neighbor that had its gas shut off in January 2007
- **13**. The president of Russia
- **15.** Capitol city of Russia
- **17.** South-western neighbor of Russia that was the recipient of a major gas shutdown in January 2006
- **20.** The Commonwealth of Independent States
- **21.** The most important means of transportation for Russian fossil fuels, especially natural gas.
- 23. Russia's major energy customer in East Asia

- **2.** Small, Caucasian country that suffered from a recent Gazprom gas embargo
- **4.** Also known as the EU
- 5. The world's largest natural gas company
- 9. Russia's oil transportation company
- **11**. Unbelievably large wilderness area of eastern Russia, home of most of Russia's natural gas and oil
- **12.** What Gazprom customers receive when a contract dispute emerges
- 14. North Atlantic Treaty Organization
- 16. Black Gold
- **18.** Oil, natural gas, coal and nuclear fuel are each considered to be an _____
- **19.** Country of the world's largest reserves of natural gas, of Gazprom, of Rosneft, and the Kremlin
- **22.** Relying too much upon any one thing, especially in energy, can result in _____
- **24.** The first name of the president of Russia



Crossword Puzzle Answers

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				Ν					Ν				R						
G	Е	0	R	G	Ι	Α			Α				0			В			
	Ν								Т		0		S	Ι	В	Е	R	Ι	Α
	E	U	R	0	Р	E	Α	Ν	U	Ν	Ι	0	Ν			L			
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	R		Κ		С											Р			
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Game I: Energy economics

Goal of this activity: to give students a quick idea of what it means to buy and sell energy with Russia, in order to better understand the world of a customer of Russian energy. This game should last two days, three at the most. Each round should be about 10 to 15 minutes at the longest.

Each team represents a country, except in the case of Russia. Two teams represent it, because it will do the majority of the trading. Each country needs to acquire a certain number of gas cards and oil cards per turn, which they will lose at the end of the turn (spent energy). Teams acquire these cards by either buying or trading them. If a team doesn't get the required amount of cards for one turn, they receive a second chance (by blaming all of the problems on foreigners or the previous ruling party). If a team cannot hand over the necessary amount of oil and gas cards a second time, they lose the game (their economy goes into a serious recession and the leader is kicked out).

The game is over when any one country reaches their goal, a certain amount of money specific to each team.

There are two kinds of cards: oil and gas. Oil cards can be traded, but gas cards can only be bought from particular countries.

One player, or the teacher, serves as "the market." Players can buy oil either from each other, directly from a supplier, or from "the market," where oil price is as high as the highest price ever paid during the game. If no supplier can agree with a country that wants to buy oil, they must either buy from the market, or lose one turn. At the beginning of each turn, each country receives a predetermined number of oil and gas cards from the market, listed under the "ability" section in each country's description. At the end of the turn, all teams need to turn the number of oil and gas cards listed under the "Needs" section of their country description, or they lose their second chance.



Russia is a special case. It has two teams representing it. It also must turn in 2 million EUR every turn in order to keep its economy running. If Russia does not turn in this amount, it uses up its second chance. If this happens twice Russia loses. If Russia loses, the game is over and all other countries' finish in the order of how close they were to reaching their goal, percentage-wise.

The starting prices are: 150,000 EUR for an oil card, and 100,000 EUR for a gas card. If two teams agree to sell or buy gas or oil cards at a different price, this is allowable.

Teams can also sign contracts for long-term supply. This means that they will buy a certain number of resources every turn from a certain country. Only the supplier of the resources, not the customer, can break this contract.

Britain	Income	2 million EUR per turn
	Goal	10 million EUR
	Needs	3 oil cards, 2 gas cards
	Ability	Can sell and buy gas only with Germany, France and Italy
France	Income	1 million EUR per turn
	Goal	5 million EUR
	Needs	3 oil cards, 2 gas cards
	Ability	*Start each turn with 1 gas card Can sell and buy gas with any country except Russia, China and Japan
Czech Republic	Income	300,000 EUR per turn
	Goal	1 million EUR
	Needs	1 oil card, 1 gas card
	Ability	Can sell and buy gas with Germany, Russia and Italy only



Germany	Income	2 million EUR per turn
	Cool	15 million EUR
	Goal	15 million EUR
	Needs	5 oil cards, 4 gas cards
	Ability	*Start each turn with 2 oil cards and 3 gas cards Can sell and buy gas with any country except China and Japan
Italy	Income	1 million EUR per turn
	Goal	5 million EUR
	Needs	2 oil cards, 2 gas cards
	Ability	Start with 3 oil cards and 4 gas cards Can sell and buy gas with any country except Britain, Russia, China and Japan
Poland	Income	500,000 EUR per turn
	Goal	2 million EUR
	Needs	3 oil cards, 3 gas cards
	Ability	Can only buy and sell gas with Russia and Germany
Russia	Income	500,000 EUR per turn
	Goal	30 million EUR
	Needs	8 oil cards, 10 gas cards
		*Russia must end each turn with 2 million EUR, which it turns into the market. If Russia does not meet this demand, it counts as using up a second chance. If this happens twice, Russia loses.
	Ability	*Start with 14 oil cards and 18 gas cards per turn Can sell gas to anyone except France and Britain
China	Income	4 million EUR per turn
	Goal	15 million EUR
L	1	



	Needs	8 oil cards, 6 gas cards
	Ability	*Start with 2 oil cards and 2 gas cards per turn Can sell and buy gas only with Russia and Japan
Japan	Income	4 million EUR per turn
	Goal	25 million EUR
	Needs	4 oil cards, 4 gas cards
	Ability	Start with 1 oil card per turn Can sell and buy gas only with Russian and China



Section Three

Resources

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