ST. PETERSBURG INTERNATIONAL ECONOMIC FORUM

JUNE 16–18, 2011

DMITRY MEDVEDEV, PRESIDENT OF THE RUSSIAN FEDERATION ANNOUNCES THE WINNERS OF THE INTERNATIONAL GLOBAL ENERGY AWARD

JUNE 17, 2011 — 15:20–16:00, Pavilion 7A, Conference Hall 7.1

St. Petersburg, Russia

2011

D. Medvedev:

Dear colleagues, laureates, and friends. This is not the first time that I have participated in the awards ceremony for the highly prestigious Global Energy Prize. The ceremony itself is being held for the ninth time today. This year, 253 scientists were nominated for the award in a process that involved 1,600 scientists from 48 countries. This attests to the highly representative character of the prize, which recognizes the exceptional contribution of an individual to science, and to the approach to global energy issues as a whole.

The growing prestige of the prize is closely linked to the ever-greater attention paid during the selection process to matters of energy efficiency, that is to say the future of the energy sector, as is shown by the choice of laureates. In my opinion, this is symbolic.

Both laureates, who have just been introduced, deserve the highest praise. I too will now say just a few words about them. First and foremost, I would like to congratulate them on receiving this prize. Let me begin with Philipp Rutberg. From what I am told, his path to science was far from simple. Mr. Rutberg graduated as a lawyer, before completing his studies at Leningrad Polytechnic Institute. Nowadays, the opposite is usually the case: people graduate from polytechnic universities and then go to law school. So in this sense you have the right background. Academician Rutberg established himself as a specialist in the field of electro physics. He achieved outstanding results in his research and, as you know, the plasmatron he developed enables us to convert highly toxic and harmful organic waste into synthetic fuel. I would also like to welcome our American colleague, Dr. Arthur Rosenfeld, to Russia. Now you can add the Global Energy Prize to your considerable collection of science awards. Dr. Rosenfeld is regarded as a true guru of energy efficiency. He has authored new construction solutions and, as we have just been shown, has developed low-cost domestic appliances. But Dr. Rosenfeld, when working in the United States Department of Energy, also played a role in shaping government policy, which,

in my view, demonstrates a keen mind and a desire to help his country. It is very interesting that both of today's laureates were nominated for their achievements in energy efficiency. I believe this shows that energy efficiency is becoming one of the key areas of development in the global energy sector. In my opinion, this is truly the case. I once again offer my sincere congratulations to our laureates and wish them good health and every success. It will be a great pleasure for me to participate in this ceremony.

P. Rutberg:

Mr. President, ladies and gentlemen, it is a great honour for me to receive this prize, but even more significant is the recognition of the importance of energy efficiency and of the merits of Russian science in this field. How does this technology work? Low-temperature plasma, consisting of ionized gas (low-temperature here means between 2,000 and 1 million degrees), can be used to treat various organic substances or substances containing organic matter, including domestic rubbish, industrial and agricultural waste, and, significantly, plastic, wood etc. as well. Furthermore, the process is ecologically clean and highly efficient. All of the energy stored in the substance undergoes conversion, without harmful emissions or dioxides, with practically no CO2. What's more is that unlike in many countries, where maize and sugar cane—and, in Europe, even wheat—are used, no food products are required for this process to take place. As a result we can obtain a reasonable amount of electricity and thermal energy, as well as liquid fuel and, in the cheapest manner possible, produce a considerable amount of hydrogen. For example, from the treatment of domestic waste, we can obtain 2 MWh of electricity, 1 MWh of thermal energy or 300 to 600 litres of fuel. The process takes place with the aid of low-temperature plasma, which is generated by special appliances: a plasma generator or simply plasmatrons. Its temperature varies from 2,000 to 10,000 degrees, which is comparable to that of the Sun's surface. As a result, full conversion is achieved,

without any harmful emissions, and a correspondingly useful product is obtained. I would like to now draw your attention to an enormous problem—the pollution of the world's oceans. Over the years, millions of tonnes of plastic have accumulated in the world's oceans. It decomposes extremely slowly, poisoning the ocean's ecosystem and the populations of coastal areas, which totals around 3 billion people. This is a problem that we can solve. For us plastic is, energy-wise, the most advantageous material. If we were to install our facilities on a ship, to serve as a floating and relatively compact base, then by collecting the plastic, we would be able to produce heat, electricity, or liquid fuel and thus solve the problem. Of course, to solve such a global issue (the islands of plastic that have accumulated are equal in scale to the state of Texas), there needs to be an international project with the participation of a large number of countries. I believe that if Russia were to propose such an initiative, it would be one worthy of a great power.

I would also like to make one further point. Technological innovations are the pursuit of talented young people, who need to be trained for this. Talk that science, particularly Russian science, has become completely and utterly obsolete does not match the reality. For example, up to 70% of students in our Institute are younger than 35. Laureates of the Global Energy Foundation's Energy of Youth prize are in attendance here today. They need to be trained and assisted, a process which is taking place in the universities of St. Petersburg and at our facilities located near the city. In conclusion, I want to express my thanks once again to all those involved in the awarding of the prize, to those who nominated me, to the members of the international committee, and to announce that I will donate a portion of my prize to the Foundation for Young Scientists. Many thanks to you all.

A. Rosenfeld:

President Medvedev, Academician Velikhov, my new friend Laureate Rutberg,

distinguished guests. It is with a pleasant degree of surprise that I thank you for this recognition, to have been selected as a policy maker and educator in the efficient use of energy. And you can be proud that your Selection Committee recognizes the importance and relevance of the field of energy efficiency.

We're saving vast amounts of money protecting the environment and mitigating climate change. As a two-term ten-year Commissioner at the California Energy Commission, I've had the opportunity to help California prioritize the need for energy services.

By priority, the order is the following: one, improving energy efficiency and demand response to time-dependant electric prices; two, investing in renewable supplies of energy; three, supplying the minimum amount of gas for our power plants to fill the remaining need; and four, building transmission lines to move power from renewable sites to low centres.

I'm happy to see that the Panel this afternoon before the ceremony pretty much endorsed those ideas. Russia, as we heard this afternoon, has started off this time of energy use with lots of energy supply, in the same sense as we Americans before the 1973 oil embargo, when we had so much dirt-cheap energy that nobody was interested.

Now, there's overwhelming interest in energy supply and energy efficiency. And once again, I thank you for the recognition.

Topic two: US progress in energy efficiency since the OPEC oil embargo in 1973. Before 1973, as I said, energy was dirt-cheap – and was treated like dirt. Efficiency was of low interest both in the US and the Soviet Union up to then. But America, led by California, responded remarkably, and has now cut its energy intensity, which is energy needed to produce an extra dollar or rouble of GDP.

To be more exact, in 2007, just before the Great Recession, Americans paid USD 1.2 trillion, for energy. That's RUB 34 trillion. That's 9% of the US economy. For retail energy, electricity, natural gas, industry, and gasoline. If we had continued, since the 1973 embargo, to do just business as usual, which is a very

slow improvement in efficiency, we would have spent nearly USD 1 trillion more. Now, 1 trillion dollars, I want to emphasize, is a great deal of money to have been saved. It happens to be enough to run the US Department of Defense and fight 1.5 wars.

Most Americans, and, I think, most people don't realize how huge the savings are. I assume that Russia can do the same sort of thing and improve its economy greatly by really turning its attention to energy efficiency.

Topic three: although America has done well, California has done better. Some of my friends named the following effect after me. I call it the California effect. But first I mentioned the energy over GDP. Americans are saving a trillion dollars a year. Now, when it comes to a state trying to control its policies, there's a problem. And that is that gasoline is a large part of domestic economics, and gasoline is controlled by the Federal Government. Or, I would say, has been controlled by no activity from the Federal Government since the 1980s.

In fact, we invented the SUV and went backwards in fuel economy.

So I choose, instead, electricity, where we have our own control. And then we see that electricity consumption per capita in California, despite huge electrification, has in fact been constant per person for 35 years. As a whole, the US has paid less attention to efficiency and consumption has grown 50%. Thus we Californians have avoided the construction and operation, in California alone, of 40 medium-sized power plants. This would have been in addition to the 80 power plants that we really need, mainly combined-cycle gas-fired plants. To the President and the rest of you, thank you.

Topic four: we're talking about 40 power plants. I want to speak about one building standard, which is mainly to control energy efficiency standards in the US. The one we're particularly proud of started back in 2005: the California Energy Commission, which is responsible for the standards in which I take a great interest, passed a regulation. If the roof is flat and invisible from the street and so of no architectural interest, that roof must be white. This cools the building

underneath the roof, cools the city, and cools the world—at no expense. The global cooling effect of the white roof, or I should say a billion white roofs, is now a hot topic in the US.

Those of you who suffered from last summer's deadly heat wave might want to adopt a similar regulation. And if not for Moscow, then at least for warmer Russian cities. Topic five. Some of you might want to know what I'm going to do with the Energy Prize money. I have decided to divide it between four charities. Three in the US and one in Russia. So, I want to thank you again from the efficiency community in California for your recognition of our successes and potentials. If we can do it, and if you set your mind to it, you guys can do it too. Thank you very much.

D. Medvedev:

May I say a few words? Professor Rutberg's idea is a worthwhile one, I think it should be set in motion, I'm talking about the collection of bottles and other plastic materials from the world's oceans. And, if required, I will request that money be allocated to this project.