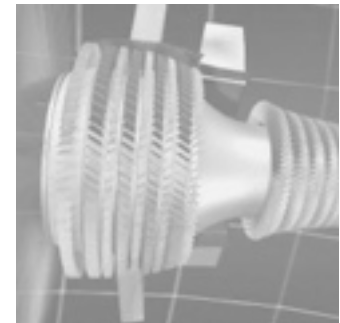


# DISTRIBUTED GENERATING COMPANY project

## Developing and Financing International Business Opportunities

November 14, 2013  
New York

Dr Dennis A. Shomko  
AVICON Partnership, UK





*Affordable energy, at any location,  
generated to high environmental standards*

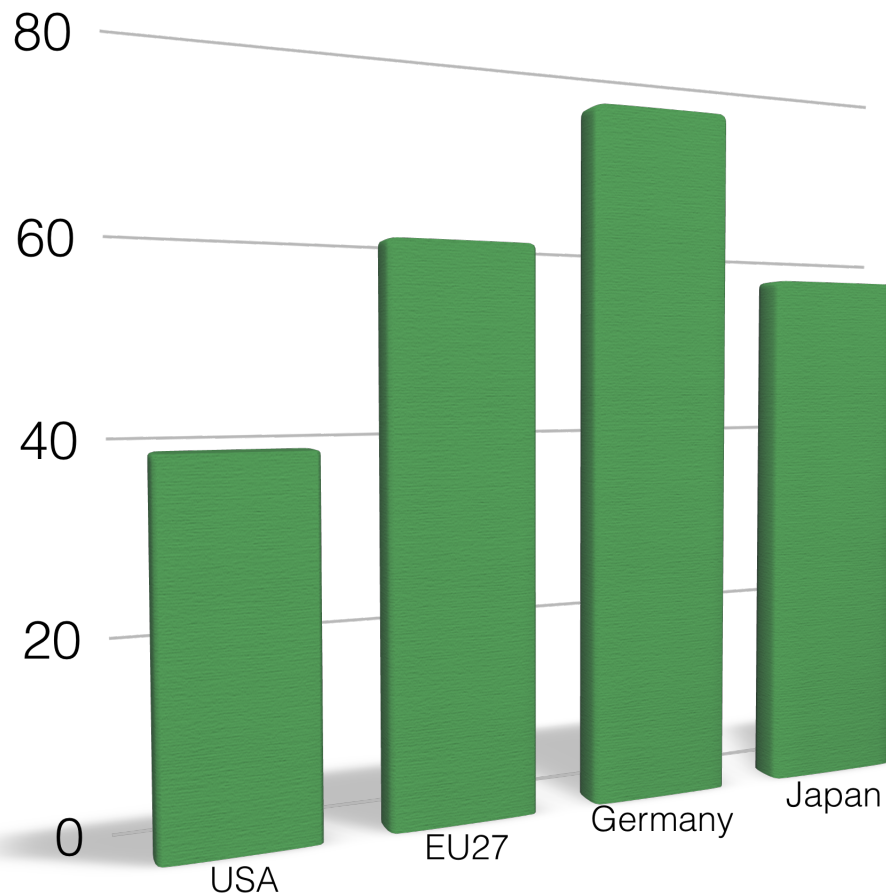


SME2SME

- A unique SME2SME multi-million-dollar transaction between US and Russian companies
- Moderate risk levels, as seen by Project Sponsors
- Anticipated positive direct, indirect and induced impacts for the economies of both countries involved



# SMEs: the driving force of economies



**Contribution to GDP by SMEs**  
Source: Global Alliance of SMEs, 2013


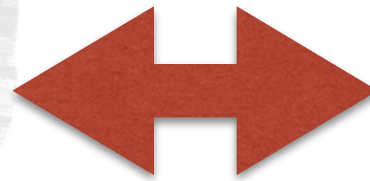
- ▶ **SMEs: Enterprises with less than 250 people**
- ▶ **South Korea: 99.9% of all enterprises**
- ▶ **SMEs:**
  - ▶ increase vitality of markets
  - ▶ provide large number of jobs
  - ▶ create wealth
  - ▶ promote economic growth
  - ▶ stimulate R&D and Innovations







**SMEs**

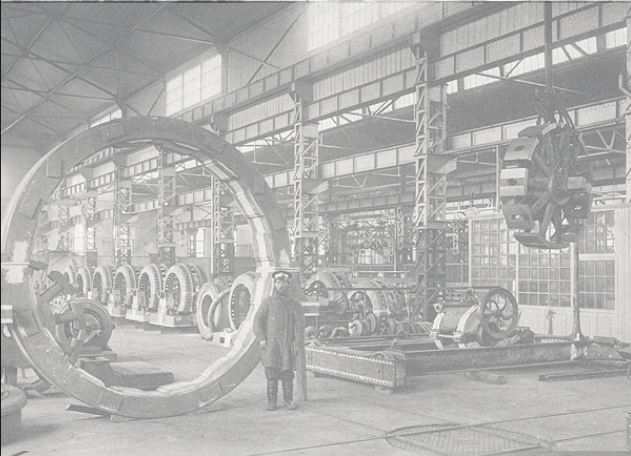


**LEGAL  
SYSTEM**

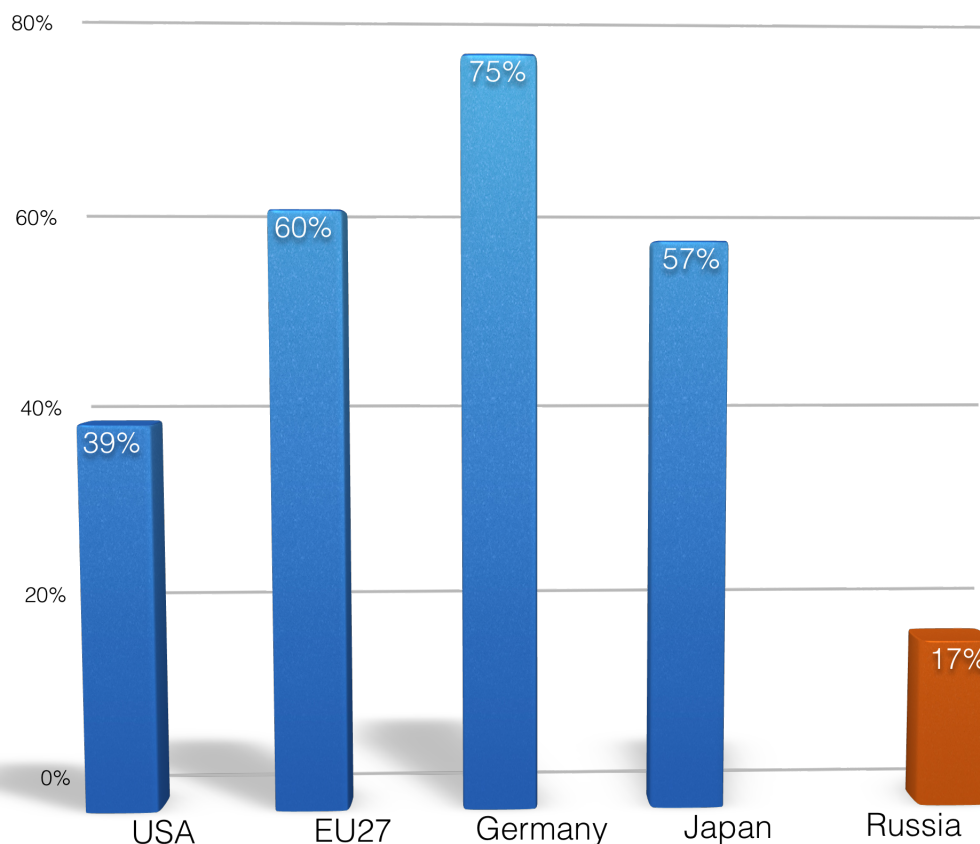
# SMEs Traditions in Russia



- DGC: a typical Russian SME. A striking contrast with western-based SMEs.
- SMEs of Pre-1917 era: very strong trading traditions, a social class called ‘*Kupechestvo*’
- Eradicated as a class during the Revolution

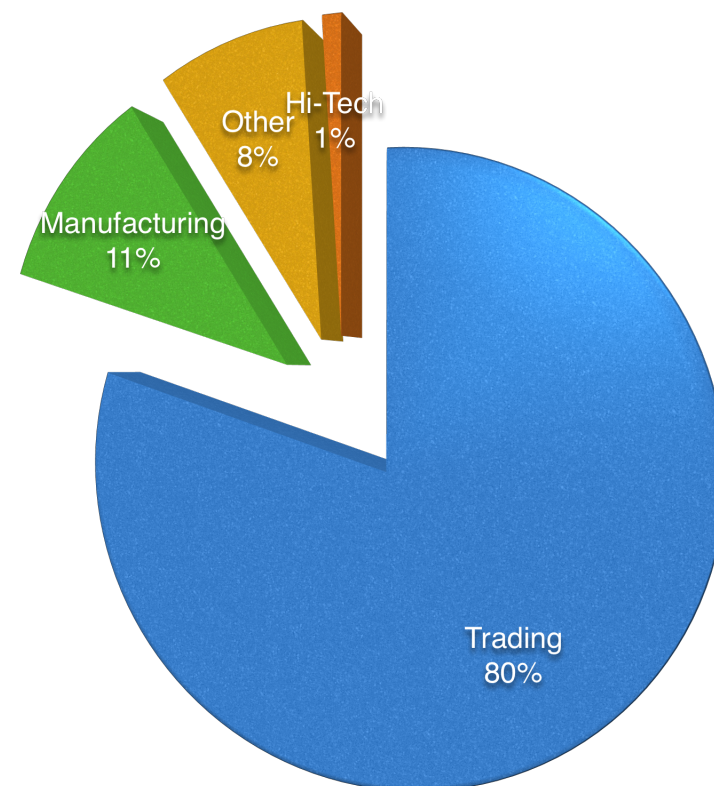


- ▶ Private property was limited to basic possessions
- ▶ Extensive Economic Growth model: expansion of ordinary inputs of labour, reproducible capital and natural resources
- ▶ Infrastructure was designed and built with large enterprises in mind only - and the philosophy has hardly changed since then



**Contribution to GDP by SMEs**

Source: Global Alliance of SMEs, 2013

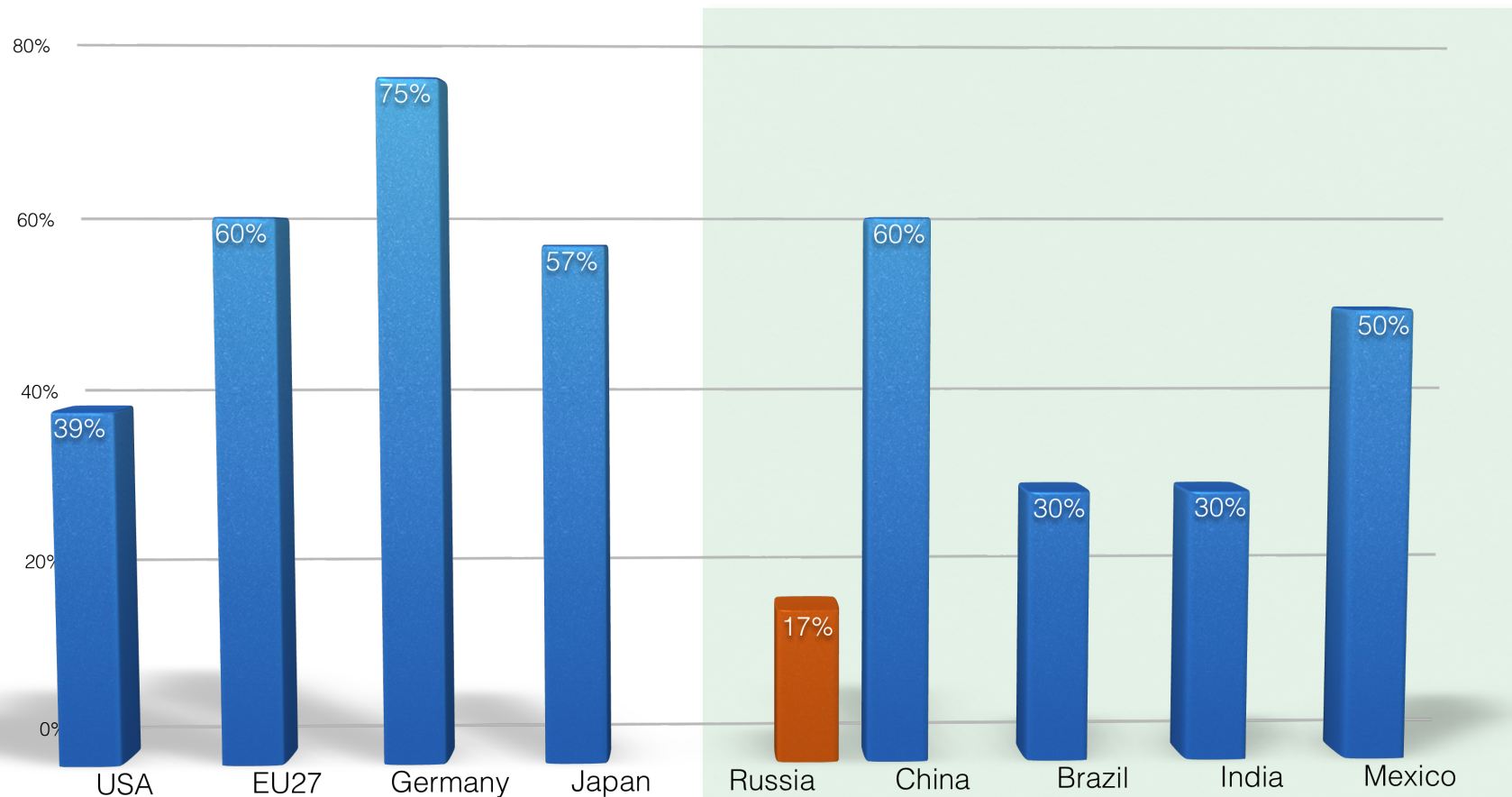


**Russian SMEs, by Industries**

Source: All-Russian Organisation of SMEs OPORA, 2013







## Contribution to GDP by SMEs

Source: Regus, A Global Report into the State and Status of Entrepreneurship, 2010, and  
The University of Sydney, SMEs - the source of China's economic miracle, 2012



ORGANISATION  
FOR ECONOMIC  
CO-OPERATION  
AND DEVELOPMENT



One area where the gap with OECD countries has remained very wide is the **business climate**. Russia scores poorly on a range of indicators of the business environment. State involvement in the economy is pervasive, corruption endemic, the rule of law weak, and the foreign trade and investment regimes relatively restrictive. These deficiencies are reflected in low levels of competition, sluggish innovation, low investment and a greater dependence on natural resource extraction than would otherwise be the case. Although on a number of fronts improvements can be discerned, there is a need for further policy action and reinforced implementation efforts in many areas, including cutting red tape, privatisation, judicial reforms, eliminating corporate subsidies and liberalising the international trade and investment regimes.

Another area where Russia lags the most advanced countries is **energy efficiency**, and this has been a major factor in poor environmental outcomes and the high carbon-intensity of the economy. The energy-intensiveness of GDP in Russia is among the highest in the world. The main imperative is to ensure that the price of energy reflects marginal social costs, which means removing subsidies and export taxes on energy and introducing mechanisms to price in the negative externalities of fossil-fuel use. The installation of meters for all energy use should also be sped up, and measurement of energy consumption improved. Especially in the interim, while many energy users do not face prices reflecting marginal social costs, there is also a role for other measures to improve energy efficiency, such as standards for housing and transport and the provision of information to firms and households.

Source: OECD Economic Surveys. RUSSIAN FEDERATION, 2011



ORGANISATION  
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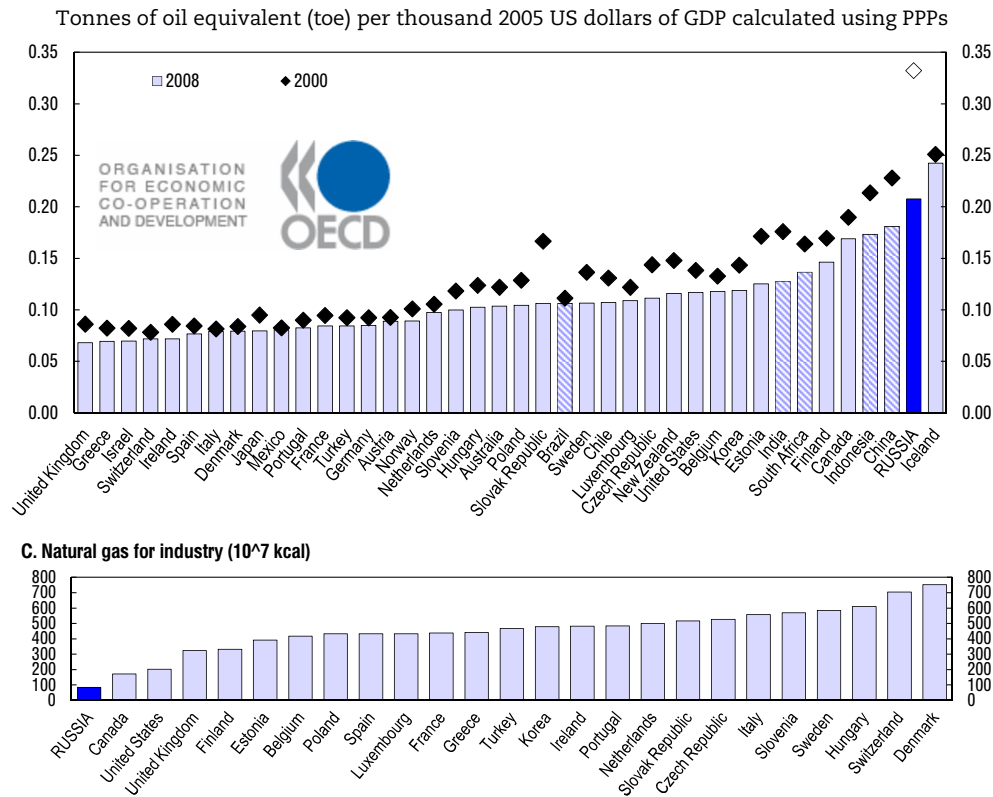


Although energy use has declined substantially in absolute terms since the Soviet era, Russia still has one of the most energy-intensive economies in the world. The high degree of energy intensity, combined with relatively carbon-intensive energy use, results in Russia accounting for a disproportionately large share of global carbon emissions: it is the sixth largest economy in the world in PPP terms but the fourth largest emitter of greenhouse gases. Moreover, low energy efficiency contributes to poor air quality, and Russia has one of the highest rates of premature mortality attributable to air pollution in the world. The scope for profitable energy efficiency investment in Russia is huge, and indeed a good deal is already happening, but a number of constraints and market failures make this process slower than optimal. This means that improving energy efficiency should be a top priority for government policy in Russia. Ambitious official targets for energy efficiency gains have been established, but so far the policy measures identified appear insufficient to meet them. The clearest imperative is to remove government interventions that result in below-market prices and to introduce new policy instruments to ensure that negative externalities associated with fossil fuel combustion are reflected in prices. The installation of meters for energy use should also be speeded up, and there is scope for greater sophistication in tariff structures to allow marginal costs to be better reflected in prices facing consumers. A number of other complementary measures may be warranted, but should be subject to careful cost-benefit analysis.

Source: OECD Economic Surveys. RUSSIAN FEDERATION, 2011



# Russia: Energy-Intensive Economy



- ▶ One of the worst energy consumption per GDP generated ratios in the world
- ▶ Prohibitive grid connection fees
- ▶ Extremely bureaucratic process



**SMEs do not find it possible to install and use energy-consuming equipment to produce goods**



# Energy Sector in Russia: Biggest Issues

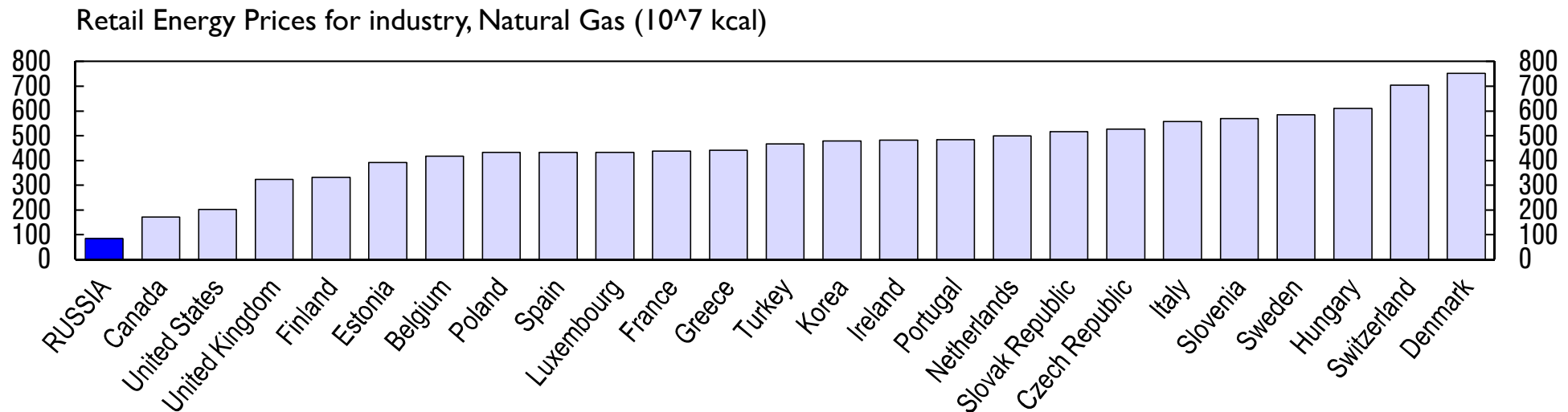


- ▶ Worn out equipment (sources report in excess of 160-175% of designed life)
- ▶ Poor management skills
- ▶ Insufficient utilisation of modern production technologies

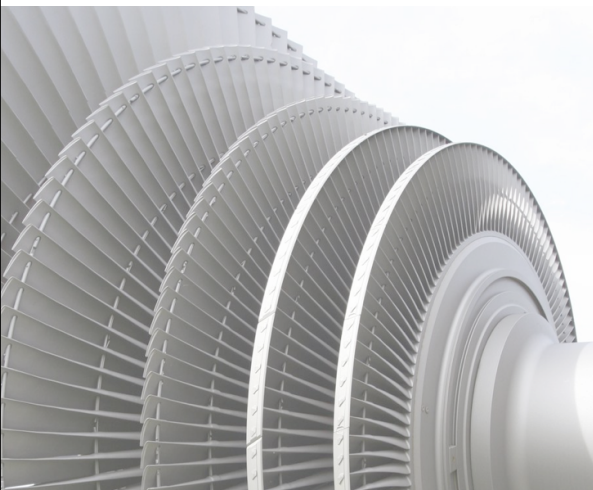
Source: MFA of Denmark, Trade Council, 2013


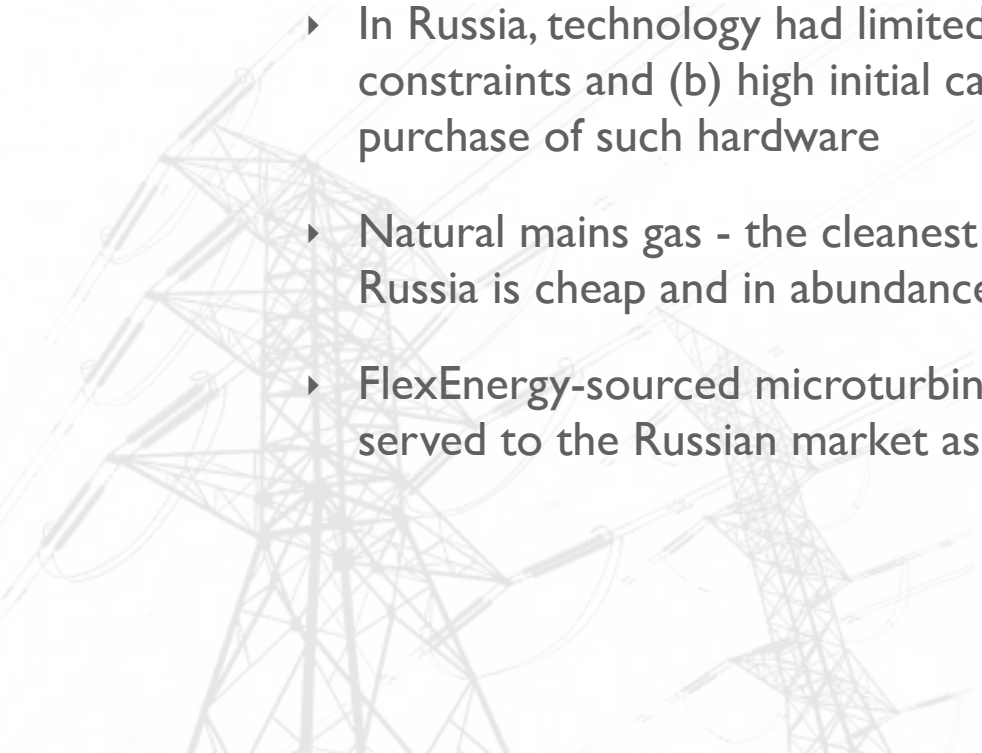
# Electricity Price Formation in Russia

formula linked to two basic components: (1) Price for Gas and (2) CAPEX



Microturbines comply with the strictest regulations and clients requirements; a large number of independent on-site installations in Russia, with positive feedback from operators on performance, serviceability and reliability.



- 
- 
- ▶ Technologies of local (on-site) power generation in the form of multi-fuel powered microturbine generators have proven to be an ideal solution for SMEs
  - ▶ Widely used in the West as a back-up power supply for critical applications; for example, solutions from US manufacturers have been accoladed recently during Sandy hurricane
  - ▶ In Russia, technology had limited application due to (a) regulatory constraints and (b) high initial capital costs for SMEs, associated with the purchase of such hardware
  - ▶ Natural mains gas - the cleanest fossil fuel for such microturbines - in Russia is cheap and in abundance
  - ▶ FlexEnergy-sourced microturbines are prone to become success stories, if served to the Russian market as solutions, not stand-alone products

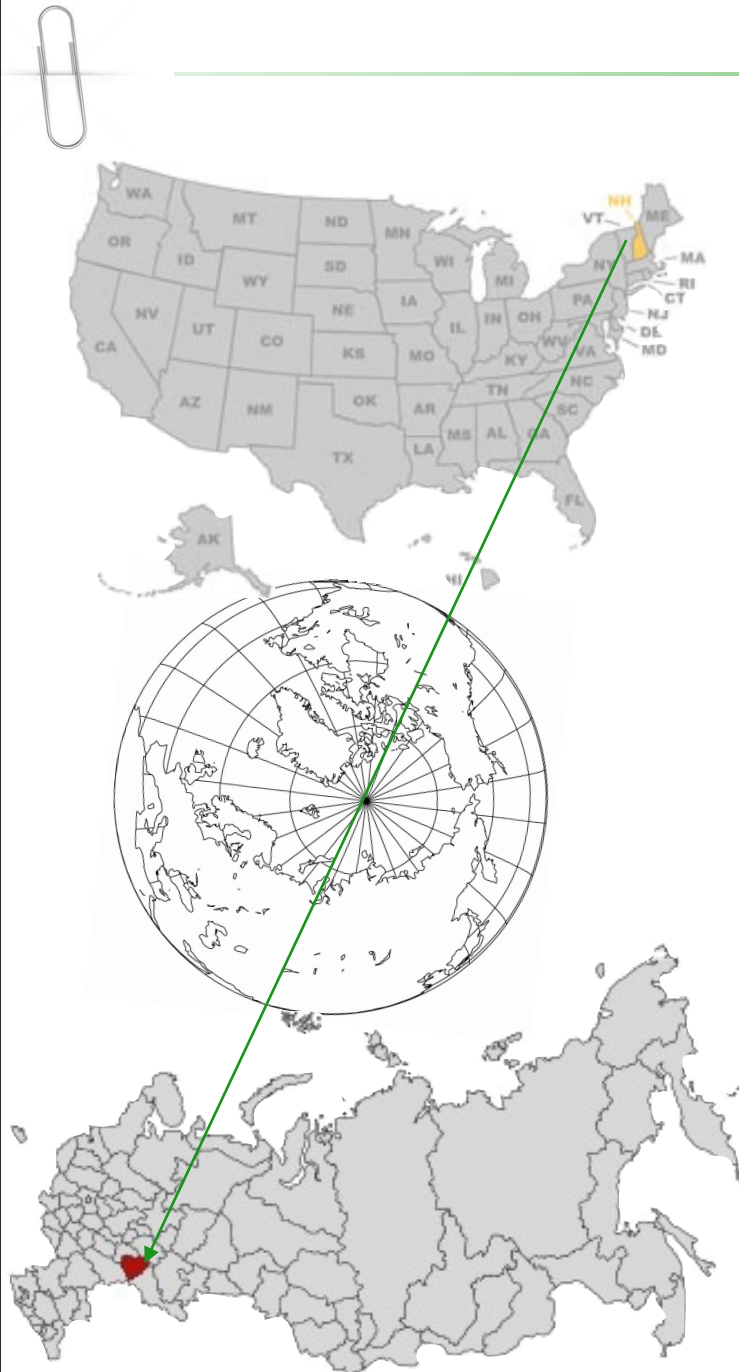
... will allow DGC to:

- ▶ generate and sell electric power to end-users with up to 10% discount to their existing tariffs;
- ▶ relief end-users from paying prohibitive Grid Connection fees;
- ▶ with little or no modifications to a chosen installation, provide users with additional benefits in form of heat and/or cold;
- ▶ offer its customers long-term, predictable contracts for guaranteed supply of energy for up to 10 years (“take or pay” basis)

- ▶ DGC have pre-negotiated a number of contracts with customers and are planning to deploy *circa* 200MWs of microturbine-based solutions over the next 3 years
- ▶ Order book is expected to increase to 800 MW by 2018-2020
- ▶ Business plan is based on a conservative approach and has a high degree of elasticity built into it

- ▶ Traditional market players in Russia through new power generation installations increase total output capacity by 2.2GW every year
- ▶ A range of independent reports suggest that it is not enough, given a large number of existing obsolete facilities and inadequate CAPEX by the major players; that is expected to only increase pressure on SMEs
- ▶ DGC expects to achieve at least 2% share of the addressable market (per MWs introduced) by 2020





- ▶ Project's total anticipated value is between \$300,000,000 and \$400,000,000, depending on the type of installations deployed
- ▶ First deliveries will take place January, 2014.
- ▶ An application will shortly be submitted to US Export-Import Bank, where DGC seeks additional financial support of the project



# Thank You

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AVCN\_VS\_FlexEnergy\_05052013

