



***CIAM Report 1/2011
scenario analysis based on projections
of socio-economic development
of the Russian Federation***

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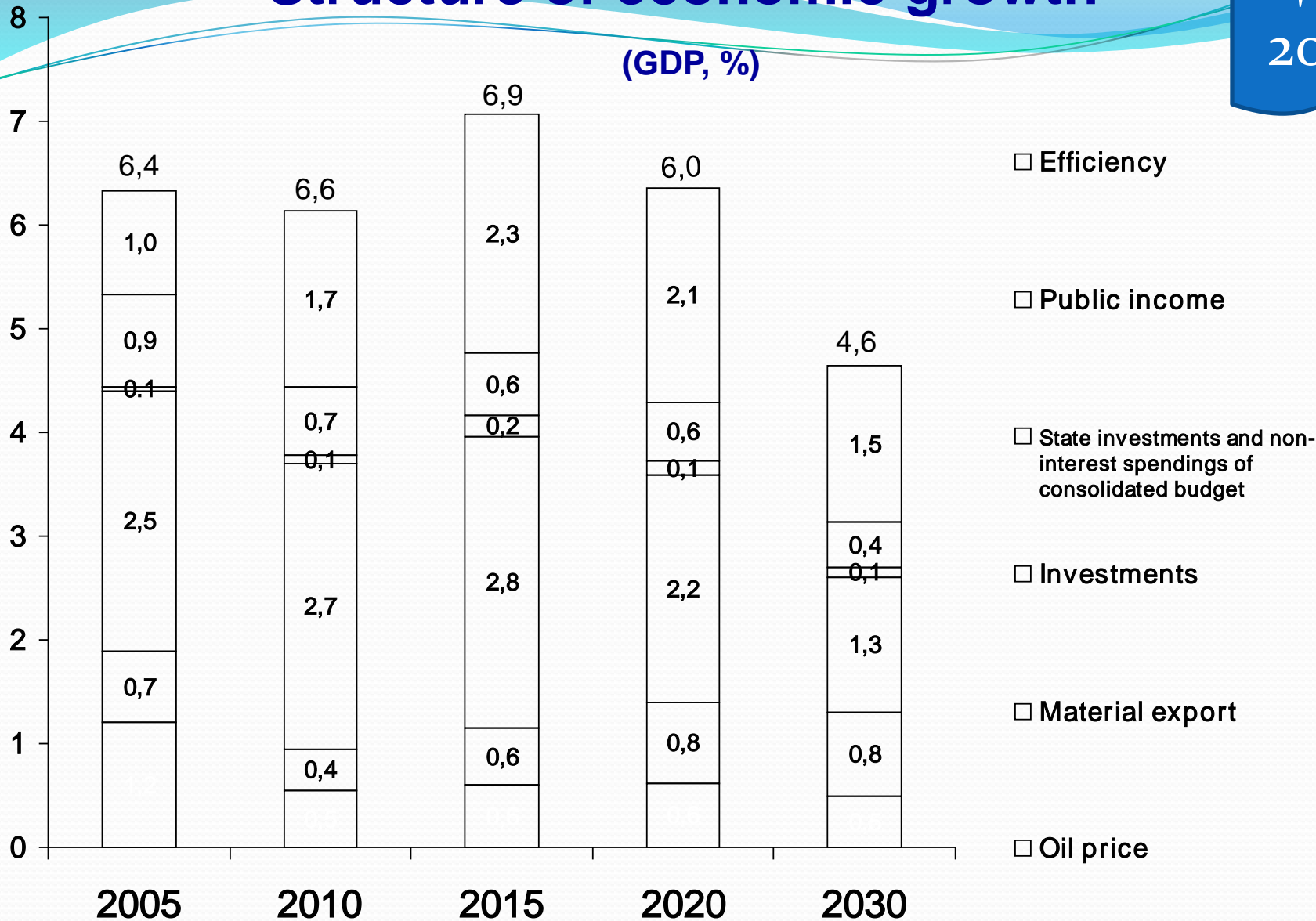
TFIAM-40-2011

Major socio-economic and environmental policy documents of the Russian Federation:

- Concept of long-term socio-economic development of the Russian Federation till 2020 (approved by the Governmental decree of 17 Nov 2008, № 1662-p);
- National security strategy of the Russian Federation till 2020 (approved by the Presidential decree of 12 May 2009 № 537);
- Energy strategy of the Russian Federation till 2030 (approved by the Governmental decree of 13 Nov. 2009 № 1715-p.);
- Transport strategy of the Russian Federation till 2030 r. (approved by the Governmental decree of 22 Nov. 2008 № 1734-p);
- Strategy of railroad transport development in the Russian Federation till 2030 (approved by the Governmental decree of 17 June 2008 № 877-p);
- Strategy of forestry sector development till 2020 (approved by decrees of the Ministry of industry and trade № 248 and the Ministry of agriculture № 482 of 31 Oct. 2008)
- Water resources strategy of the Russian Federation till 2020 (approved by the Governmental decree of 27 Aug. 2009 № 1235-p);
- State policy framework of the Russian Federation with regard to the Arctic till 2020 and beyond (approved by the Governmental decree of 18 Sept. 2008 № Пп-1986).

Concept of long-term socio- economic development of the Russian Federation till 2020

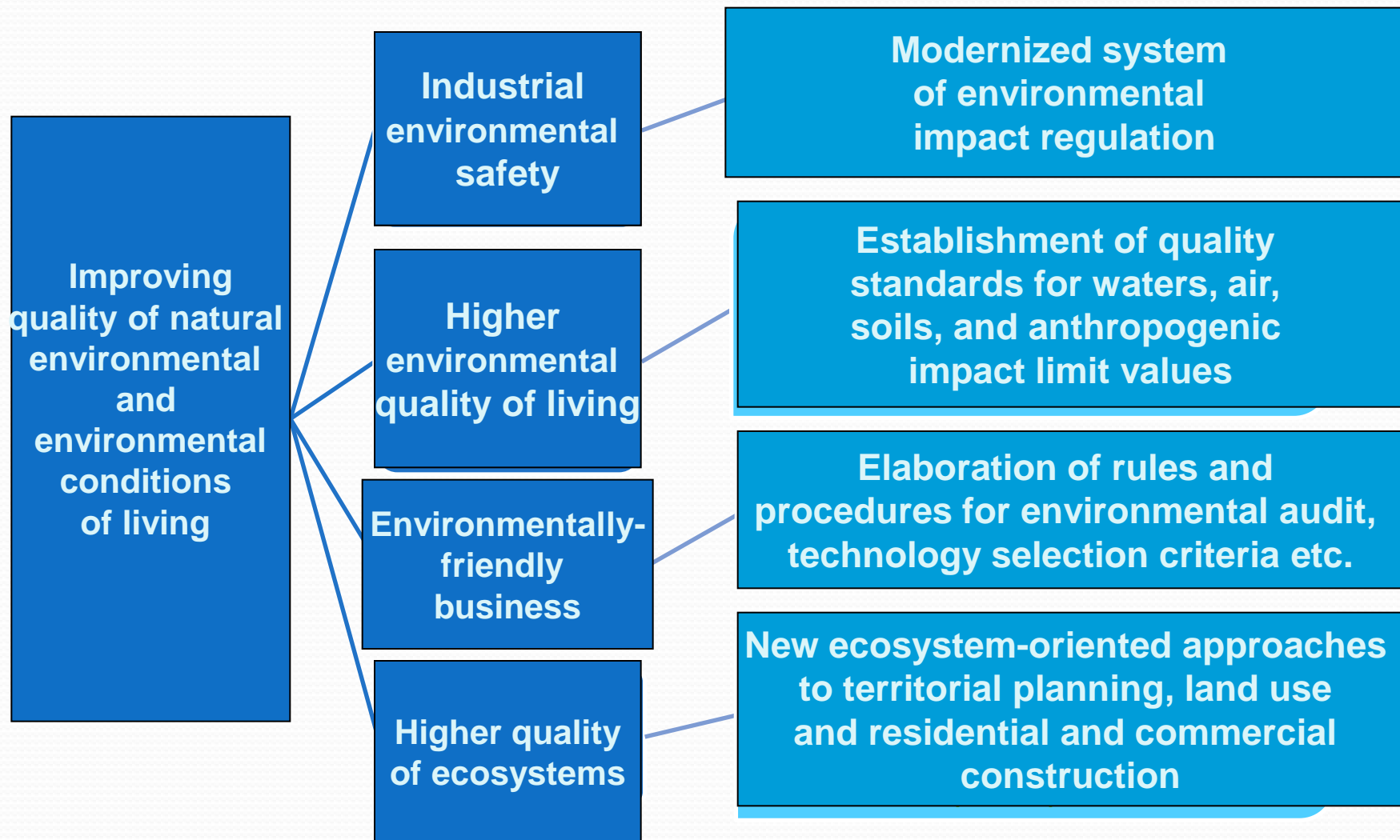
Structure of economic growth



Grouping of subjects of the Russian Federation with regard to their air emissions from stationary sources in 2009



Living conditions – environment



Major trends in economic development of the Russian Federation

- ❑ Adaptation to changing dynamics of the global economy and of demand for hydrocarbons;
- ❑ increasing dependence of the national economic growth on foreign investments and state of the investment climate
- ❑ Exhaustion of potential existed in innovative sectors of the economy
- ❑ Identified need to overcome limitations of the economic development related to existing infrastructure (power generation, transport sectors)
- ❑ Decrease of economically active population in coupled with increasing demand in qualified personnel
- ❑ Increased economic competition on domestic and international markets

Key factors

defining major options of long-term socio-economic development of the Russian Federation:

- ❖ degree of development and realization of competitive advantages of the Russian Federation in energy sector, science and education, high-tech etc;
- ❖ development dynamics of institutions concerned with entrepreneurship and investment activities as well as competitiveness of companies;
- ❖ intensity of innovative retrofitting of converting industries and dynamics of labour capacity;
- ❖ dynamics of transport and energy infrastructure development;
- ❖ intensity of human potential;
- ❖ integration of Euro-Asian economic area.

Long-term development scenarios

Inertial

- conservative raw material export oriented model

- Decreasing competitiveness of converting industries and increasing dependence on import of goods and technologies
 - GDP growth rate limited to 4% in 2011-2020
-

Energy and raw material-based

- Accelerated development and modernization of energy and raw material production and transport sectors

- Partial modernization of hi-tech sectors with limited export of products with high added value
 - GDP growth rate – 5-6% in 2011-2020
-

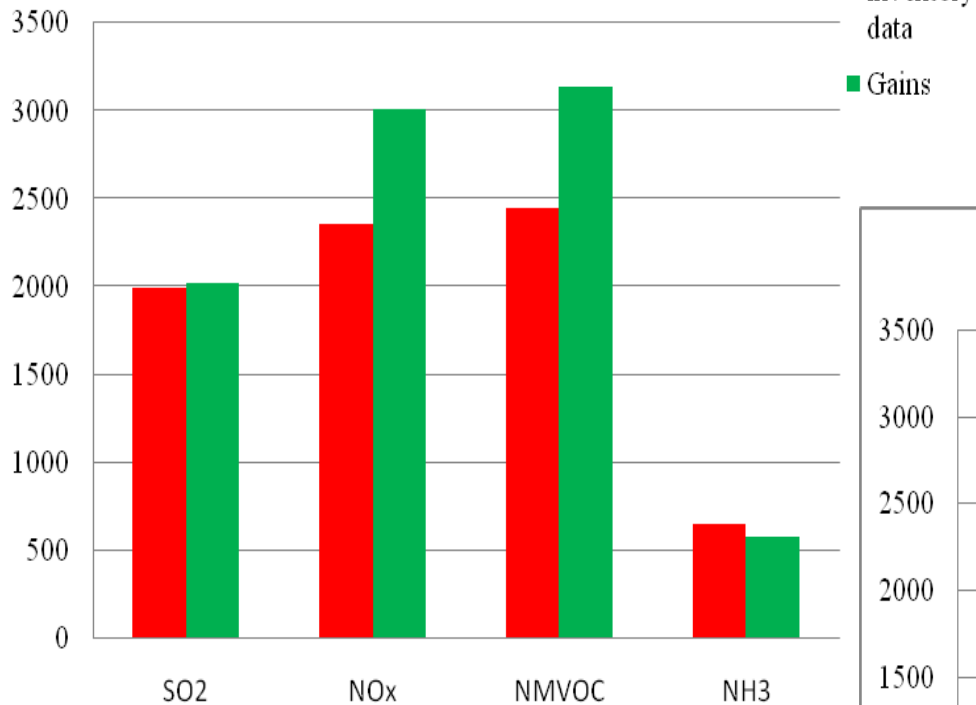
Innovative

- Creation of effective national innovative system and implementation of hi-tech projects

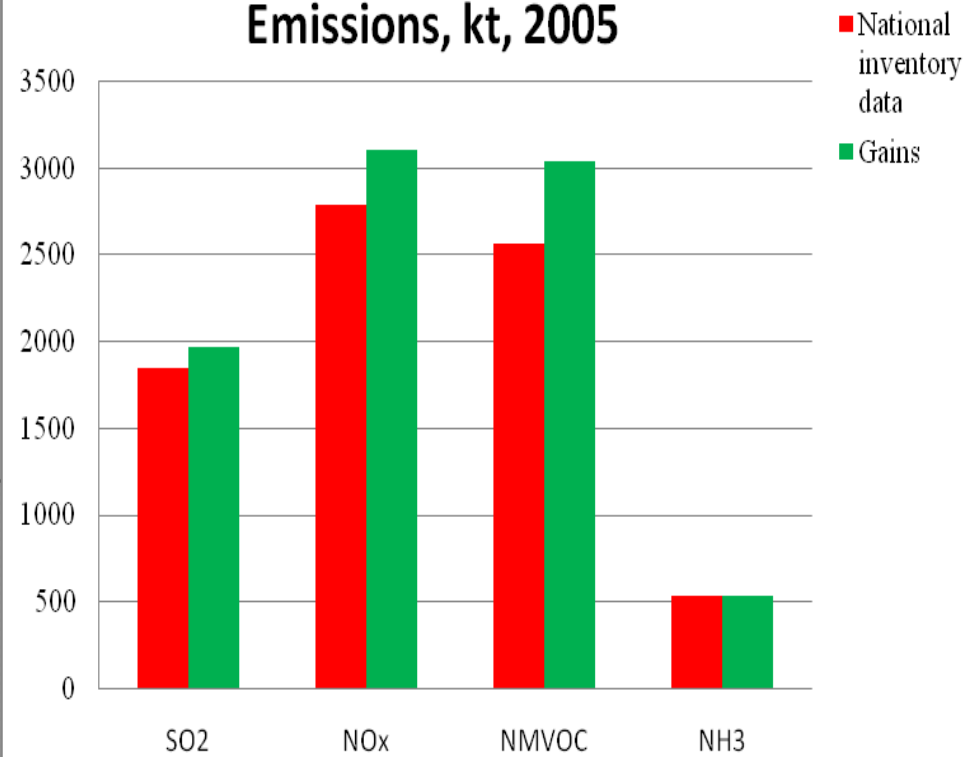
- Competitive human capital and knowledge-based economy
- Creation of new regional development centers
- Dynamic economic growth 6,5% per year

RUSSIA (EMEP)

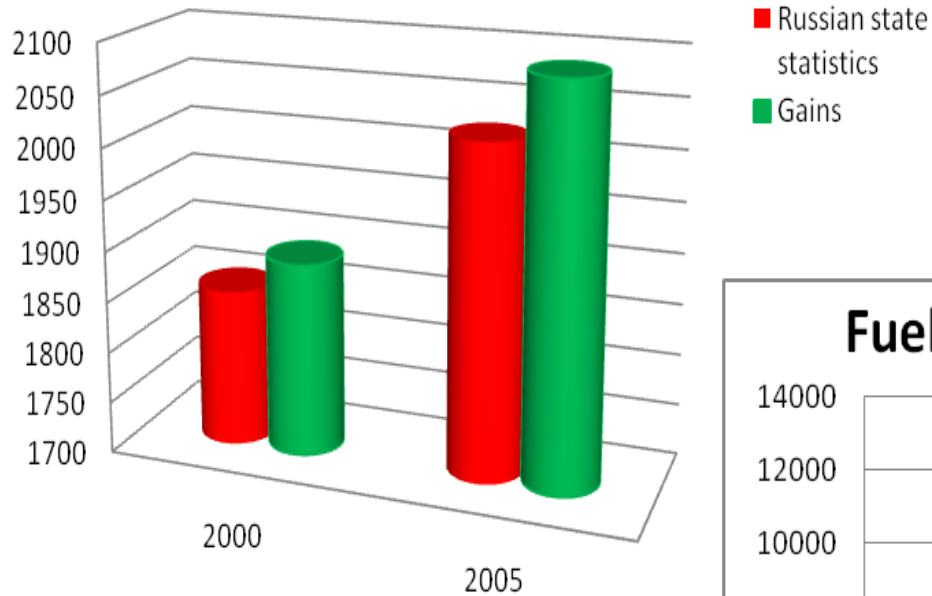
Emissions, kt, 2000



Emissions, kt, 2005

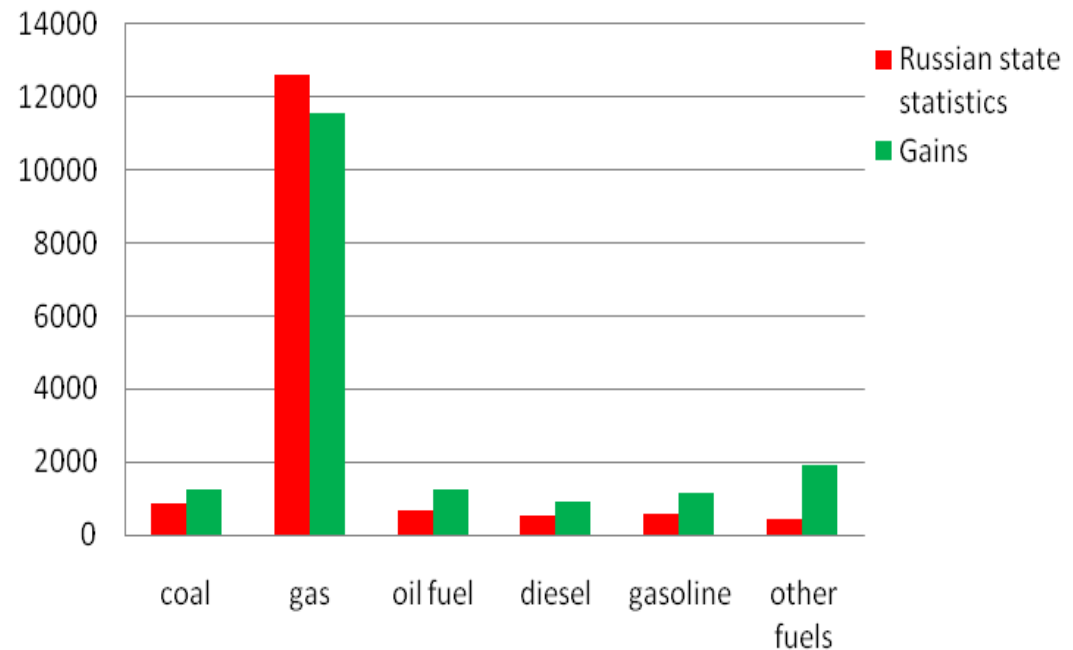


Electricity production, PJ, 2000&2005

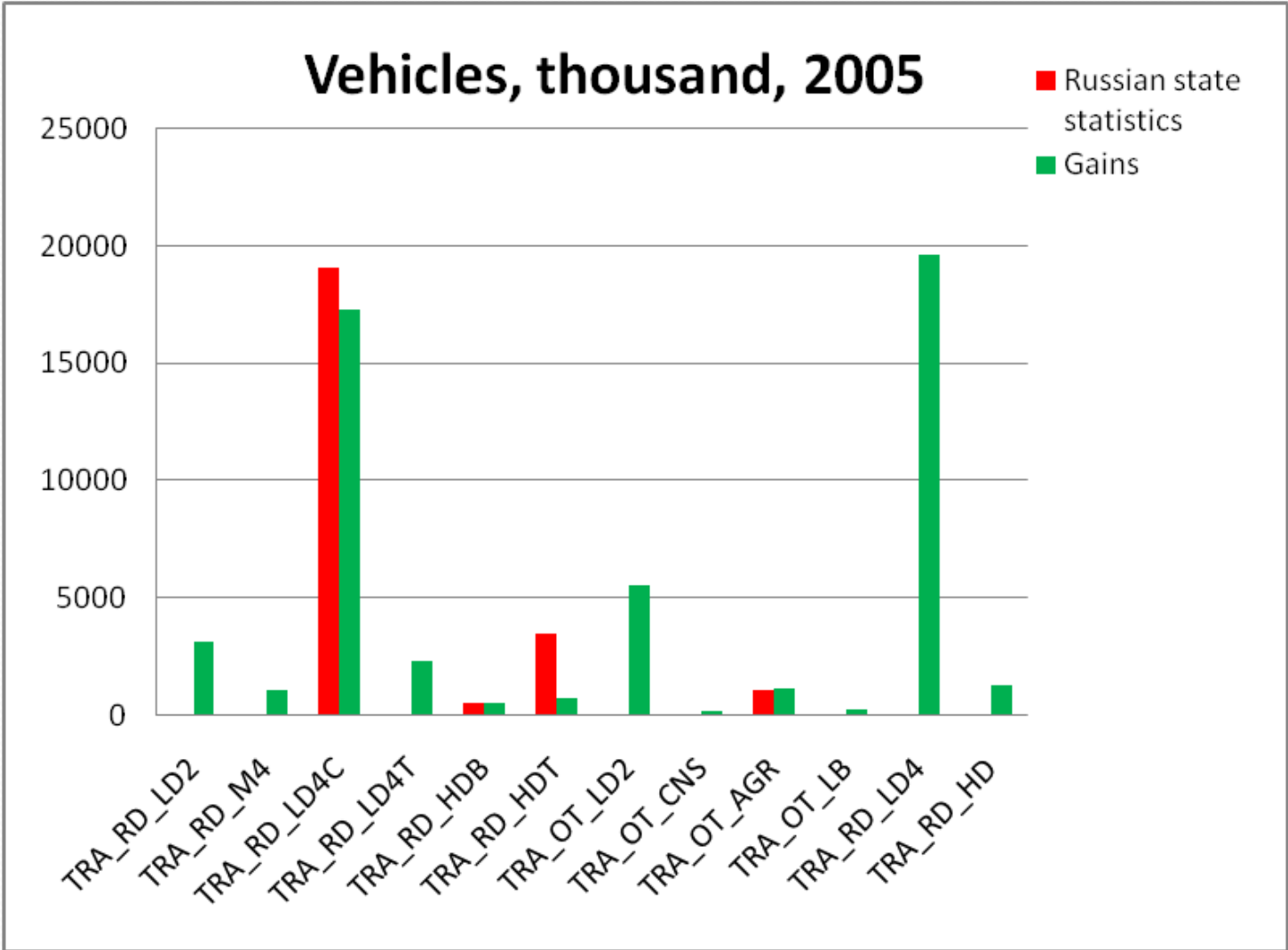


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Fuel consumption (total), PJ, 2005

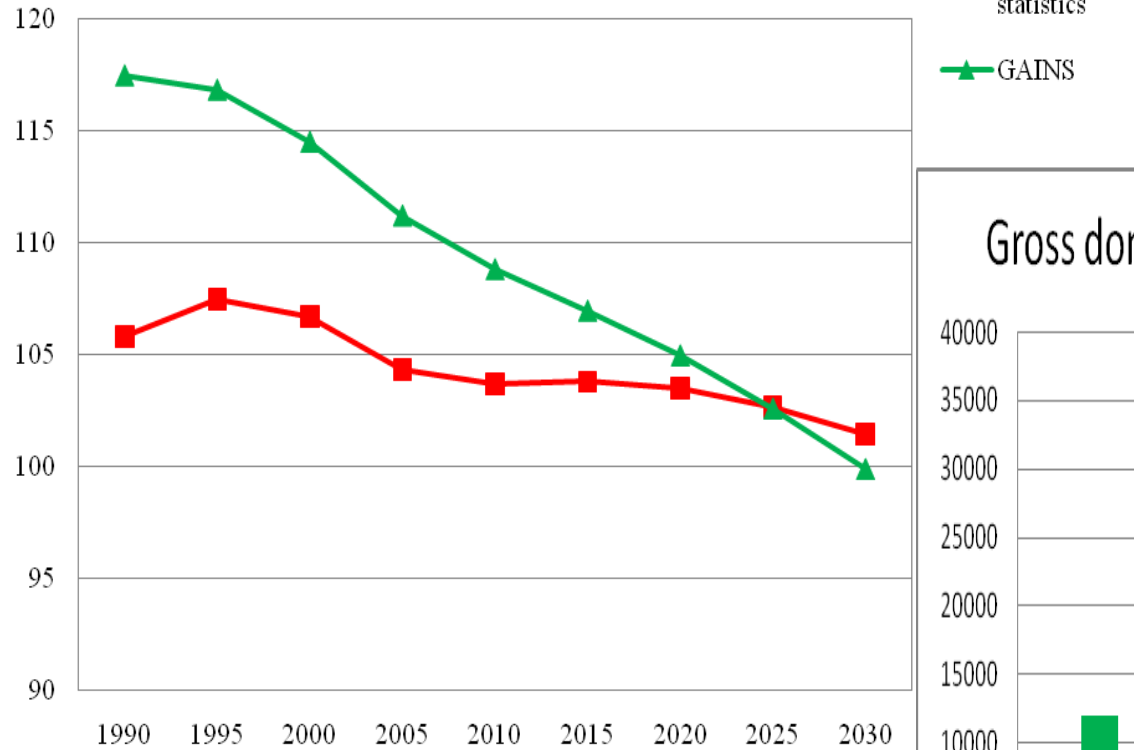


RUSSIA (EMEP)

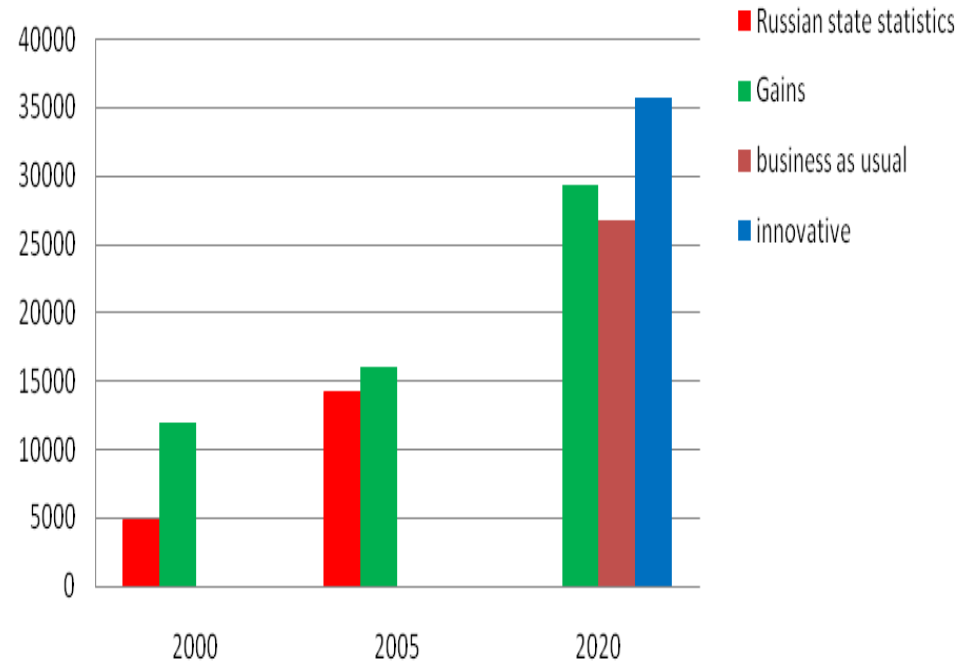


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Population, 10^6 people

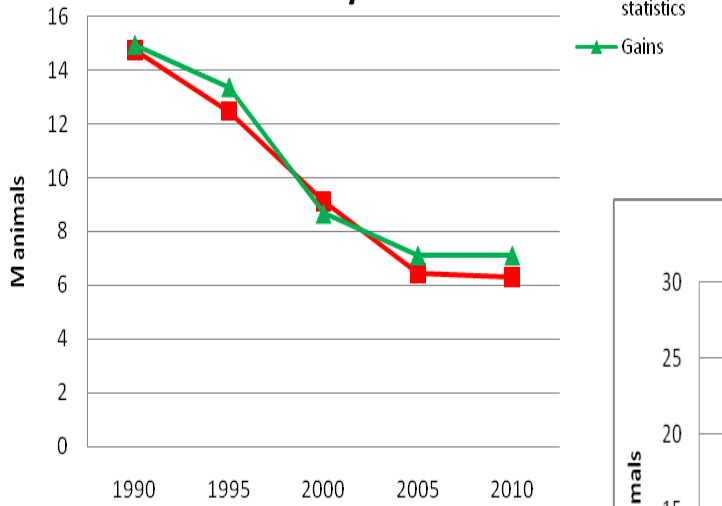


Gross domestic product, 10^9 roubles

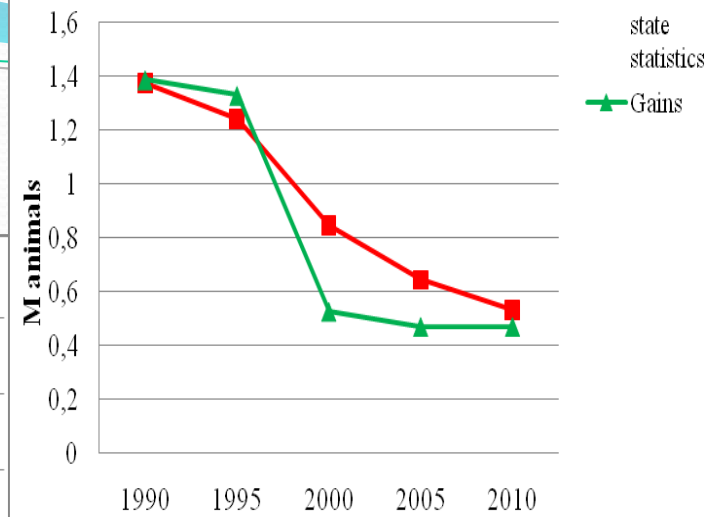


RUSSIA (EMEP)

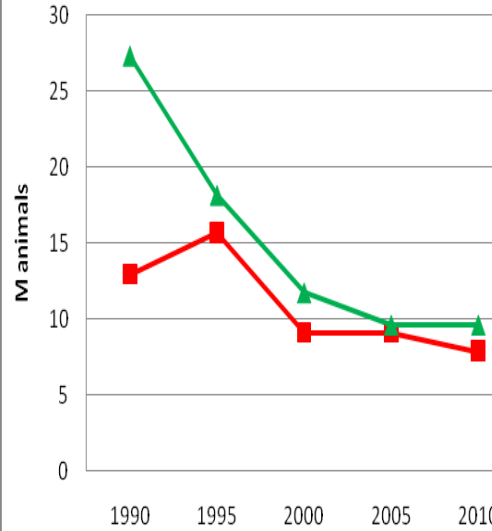
Dairy cows



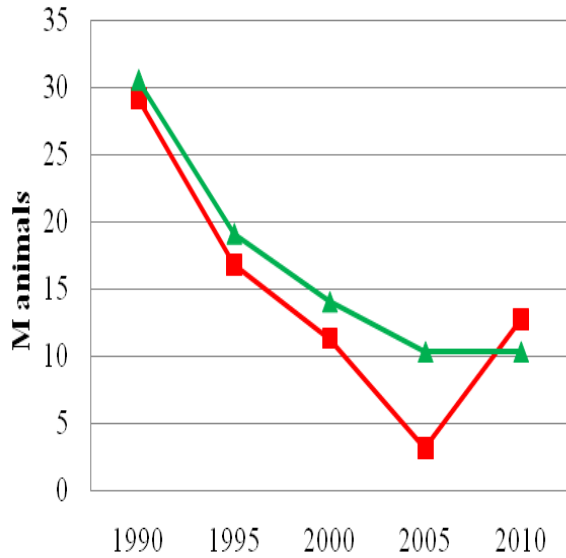
Horses



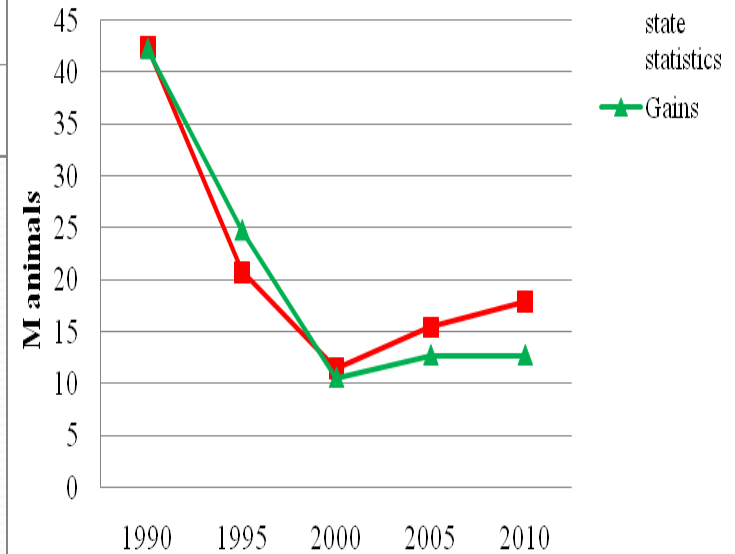
Other cattle



Pigs

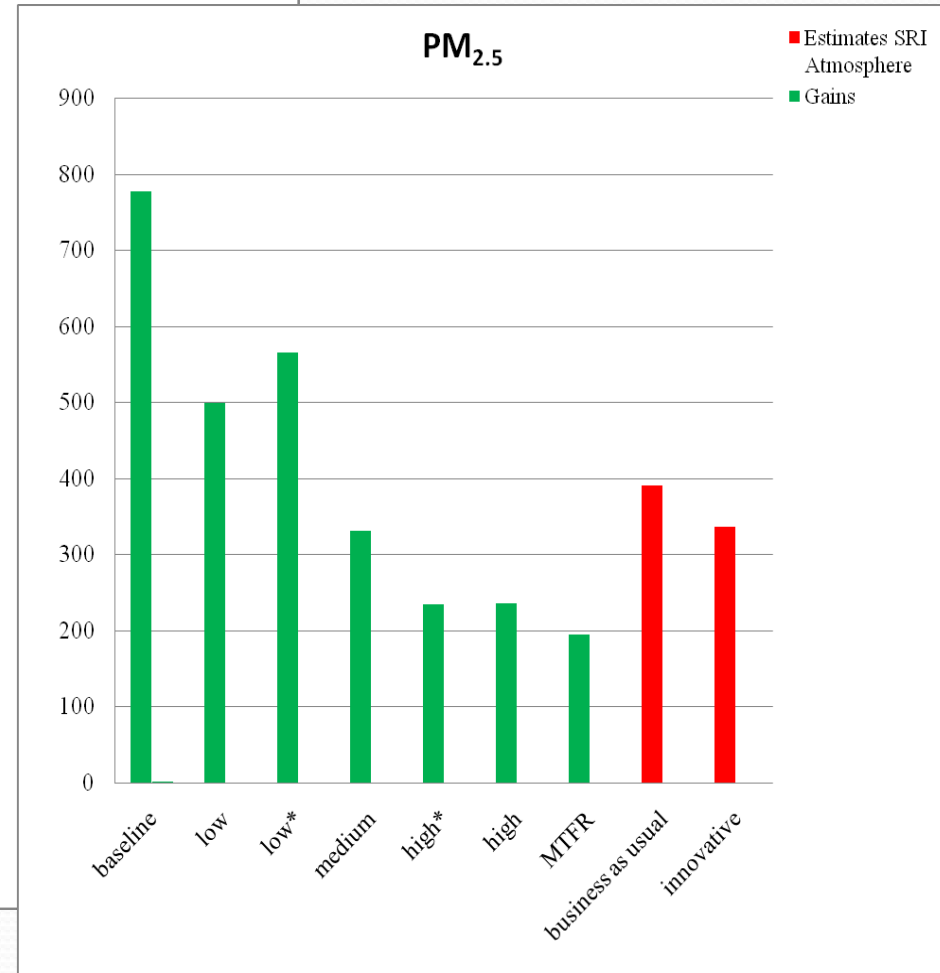
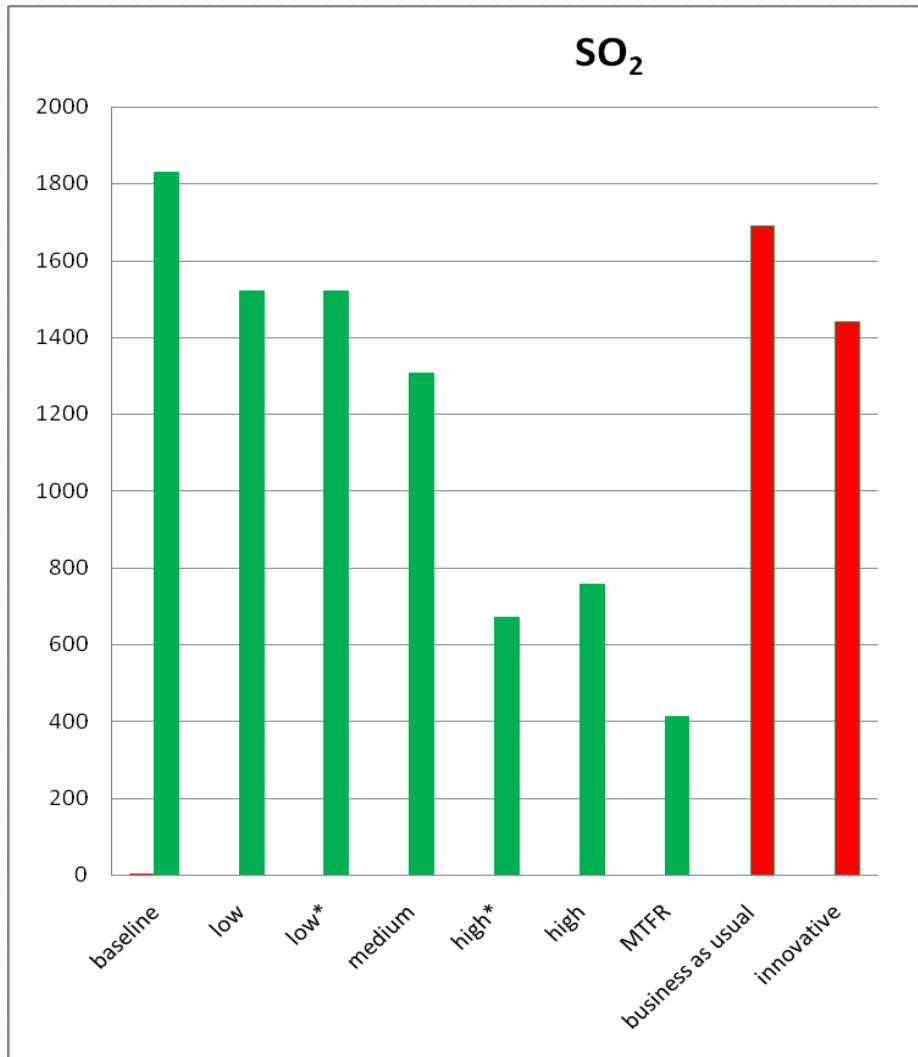


Sheep and goats



Estimates of emissions for 2020, kt

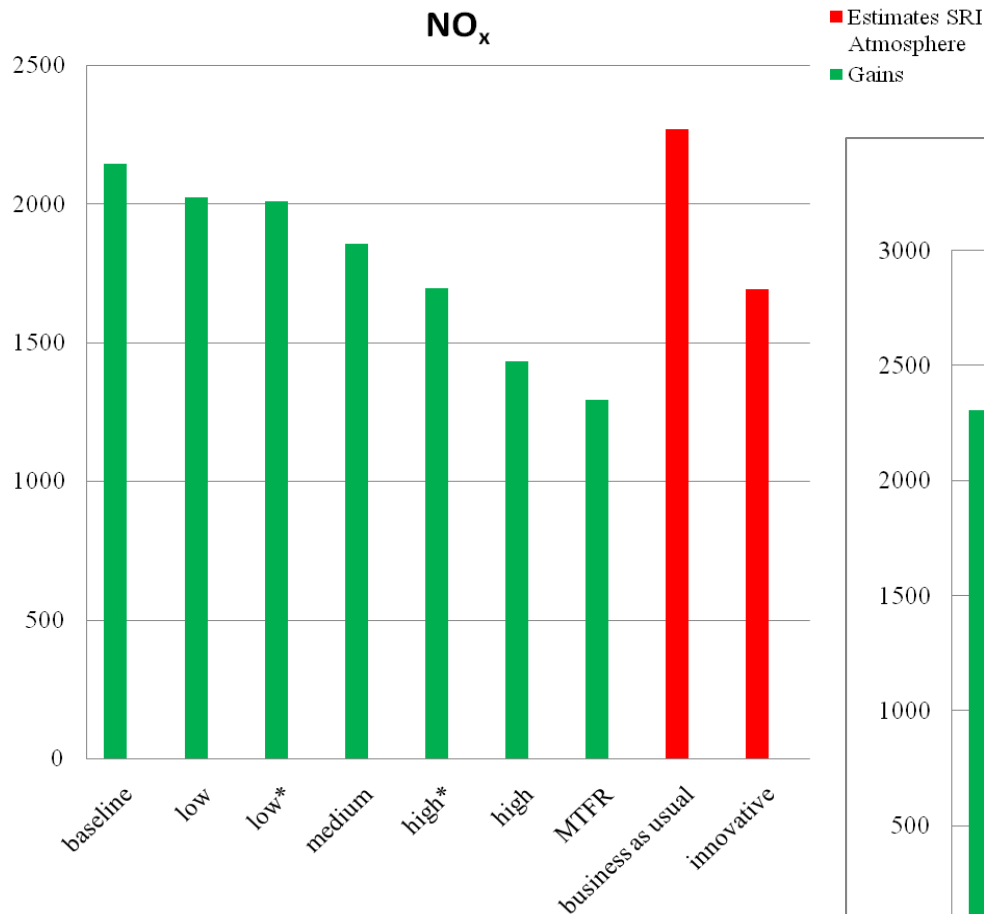
RUSSIA (EMEP)



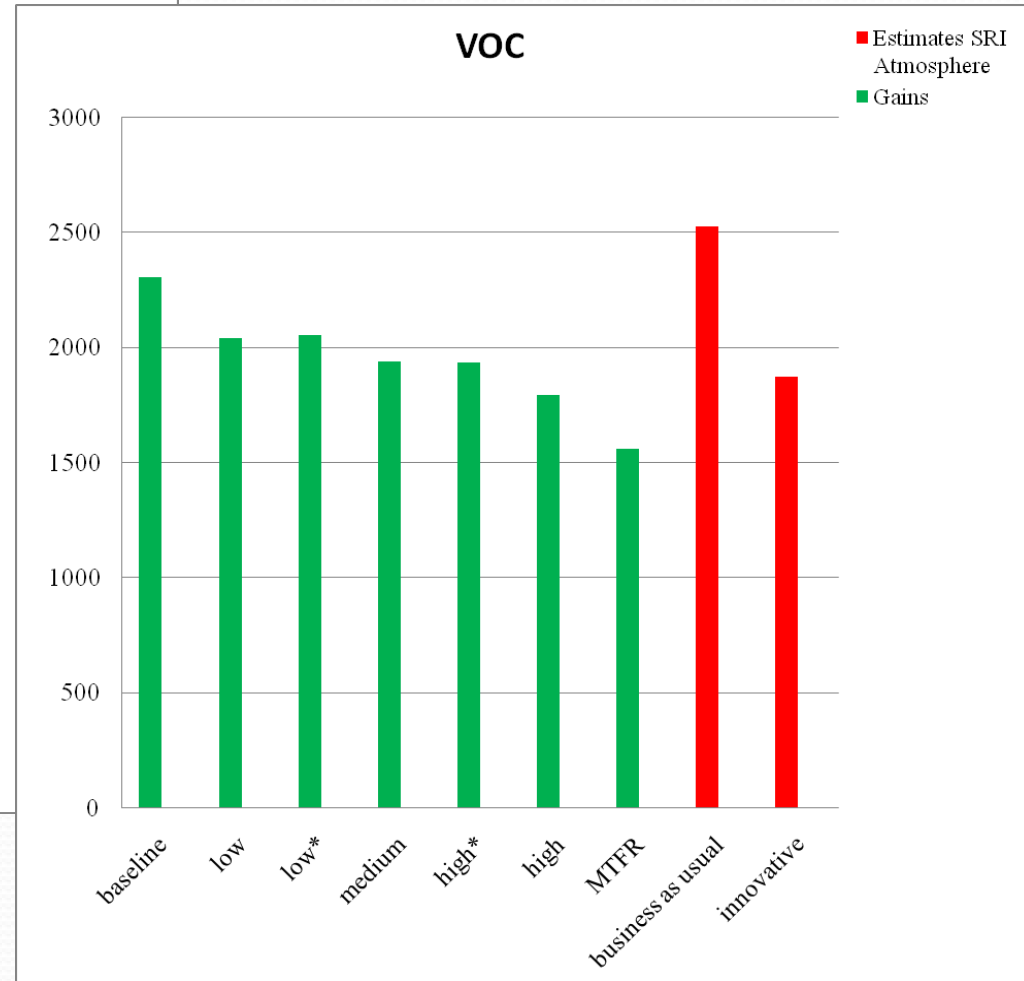
Estimates of emissions for 2020, kt

RUSSIA (EMEP)

NO_x

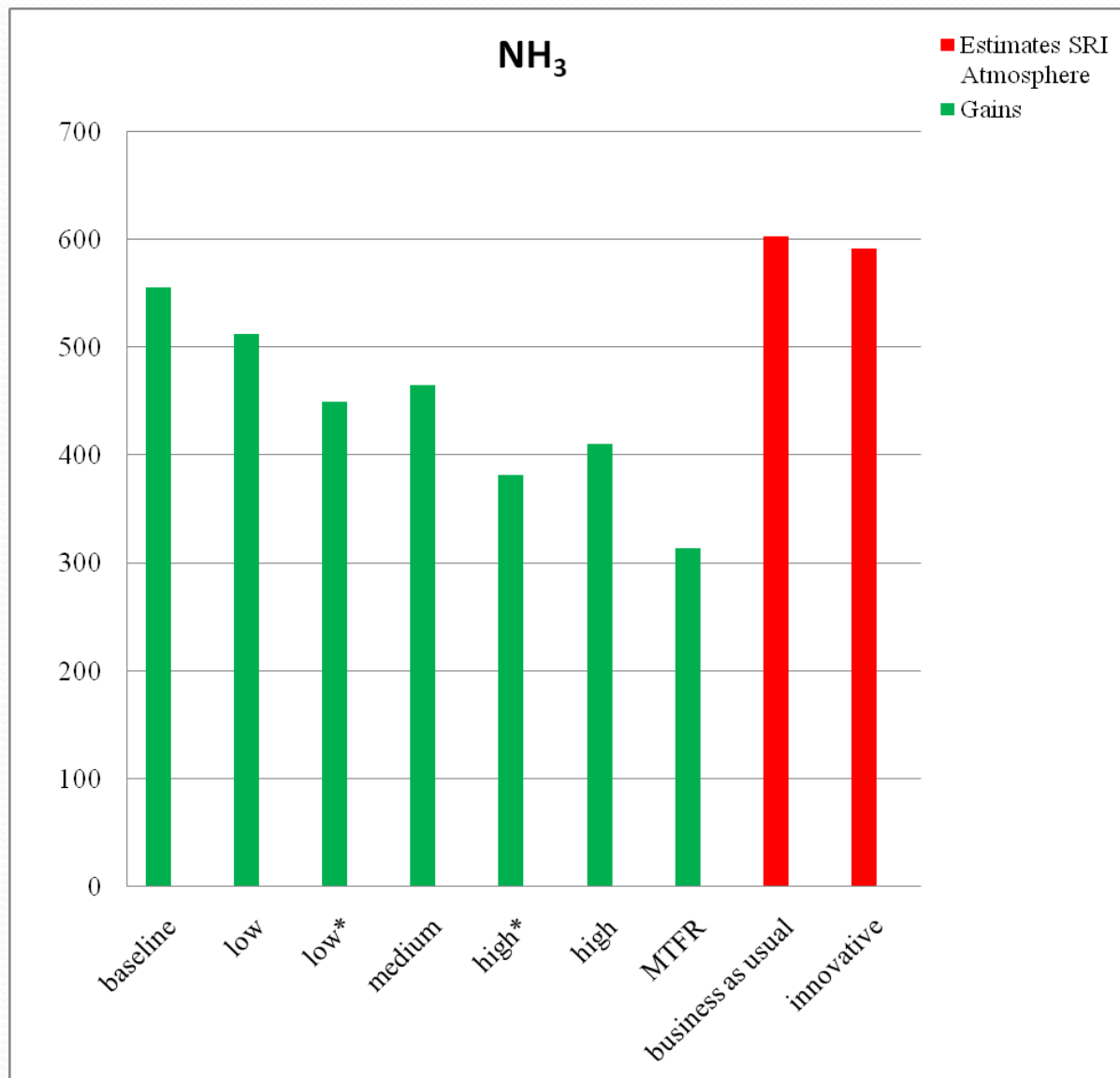


VOC



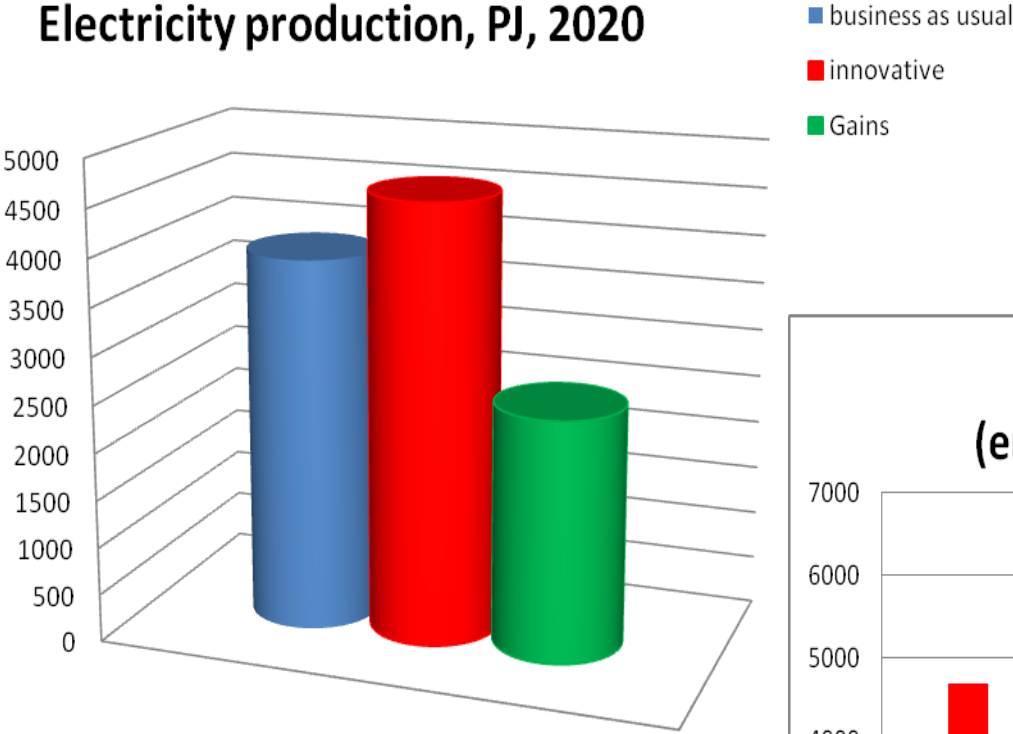
Estimates of emissions for 2020, kt

RUSSIA
(EMEP)

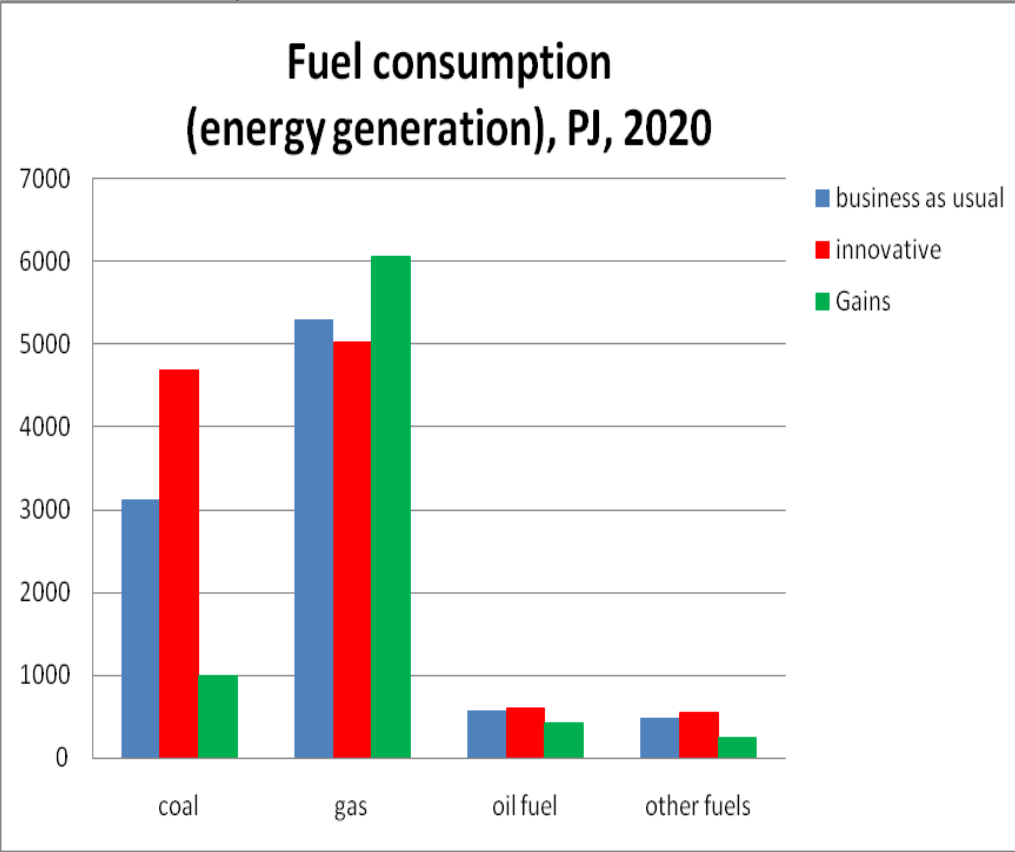


RUSSIA (EMEP)

Electricity production, PJ, 2020



Fuel consumption (energy generation), PJ, 2020



Change in emission levels compared to the year 2000

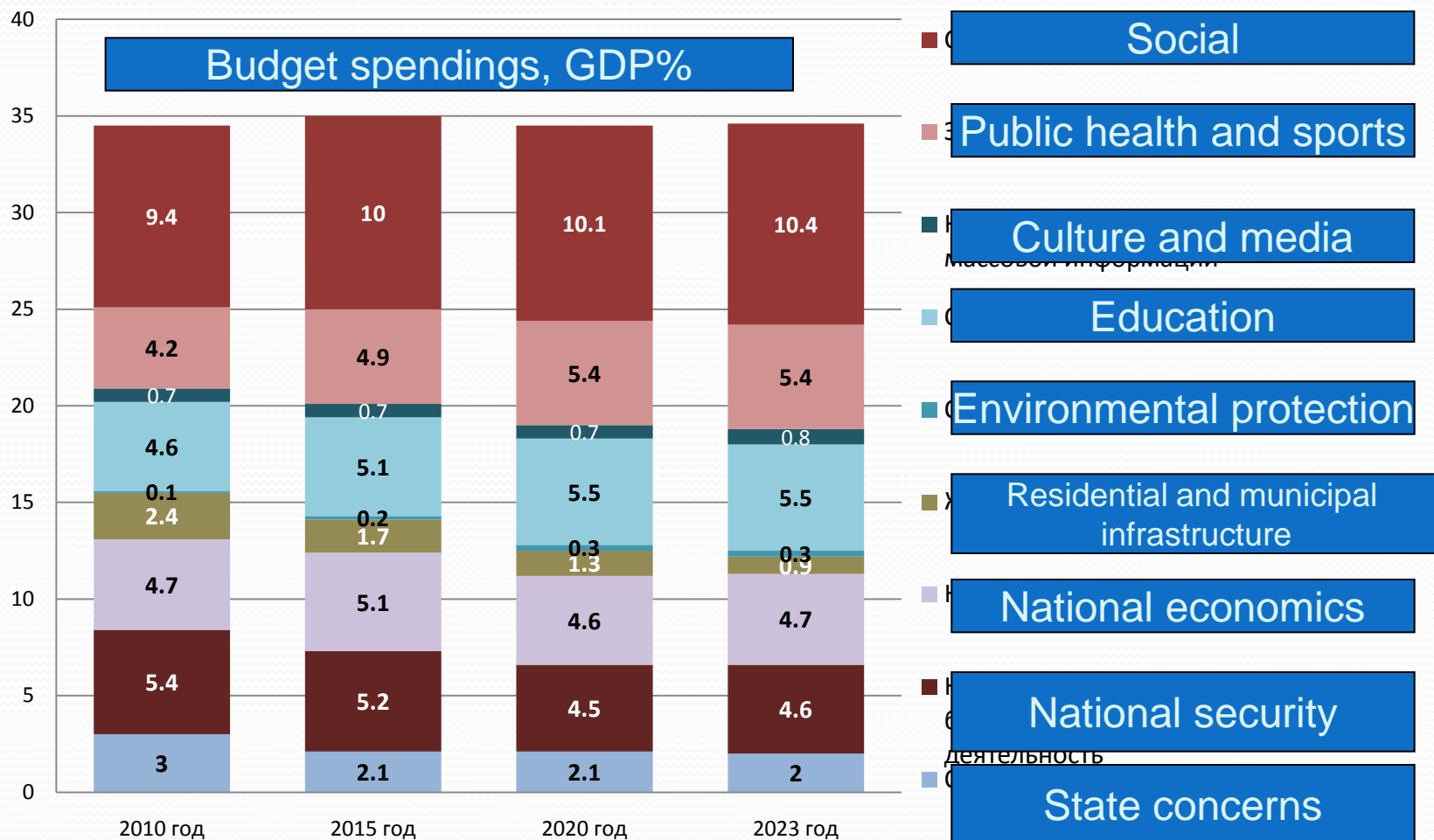
Estimates of CIAM

Non_EU countries	Baseline	Low	Low*	Medium	High*	High	MTFR
<i>SO₂</i>	-27%	-34%	-34%	-51%	-75%	-73%	-84%
<i>NO_x</i>	-29%	-34%	-35%	-39%	-44%	-52%	-56%
<i>PM_{2.5}</i>	0%	-30%	-22%	-53%	-66%	-64%	-75%
<i>NH₃</i>	4%	-5%	-19%	-18%	-29%	-24%	-38%
<i>VOC</i>	-29%	-38%	-37%	-40%	-40%	-45%	-54%

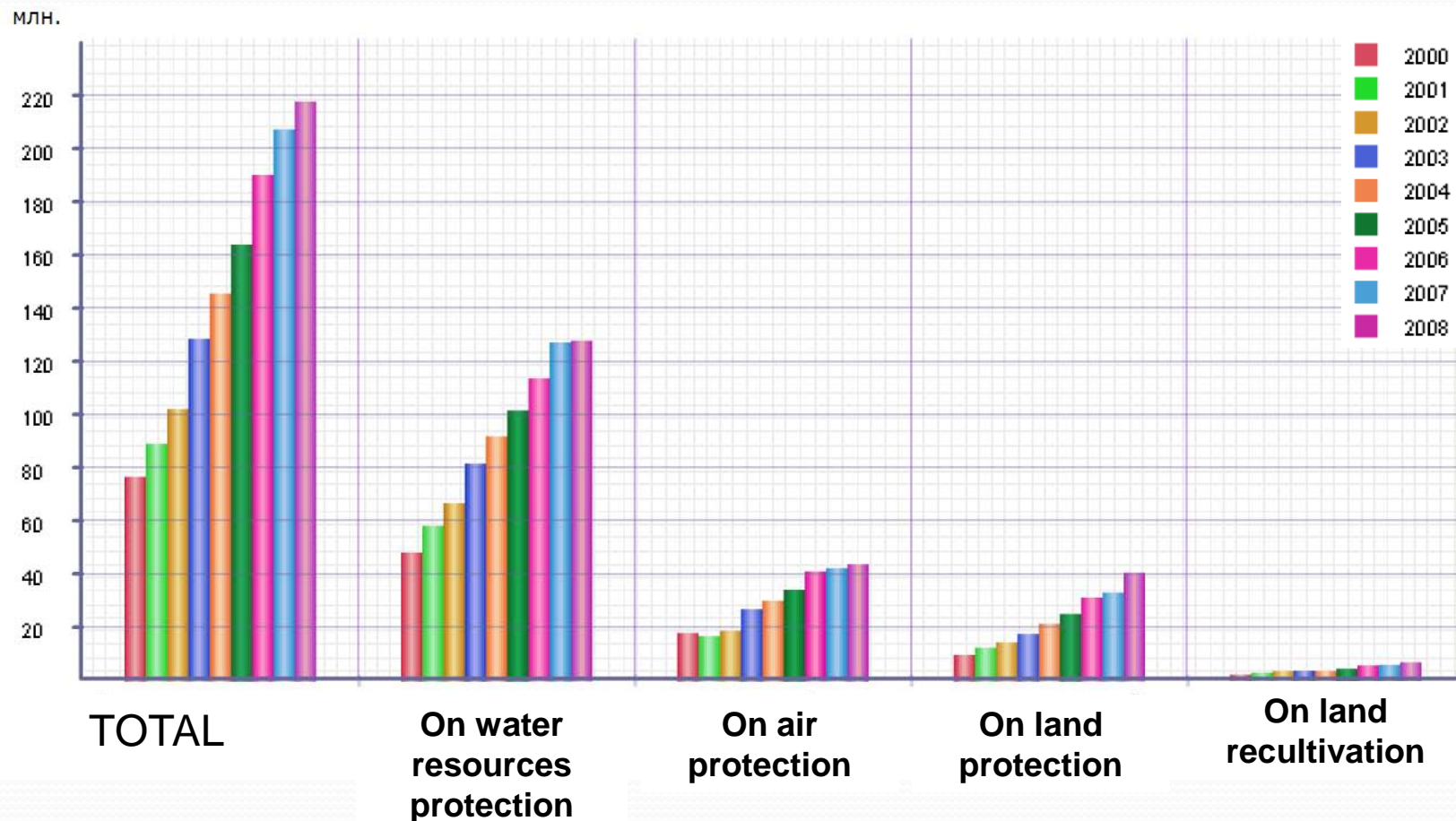
Estimates of SRI Atmosphere

Russia (EMEP)	Business as usual	Innovative
<i>SO₂</i>	-15%	-28%
<i>NO_x</i>	-4%	-28%
<i>PM_{2.5}</i>	-3%	-16%
<i>NH₃</i>	-7%	-9%
<i>VOC</i>	3%	23%

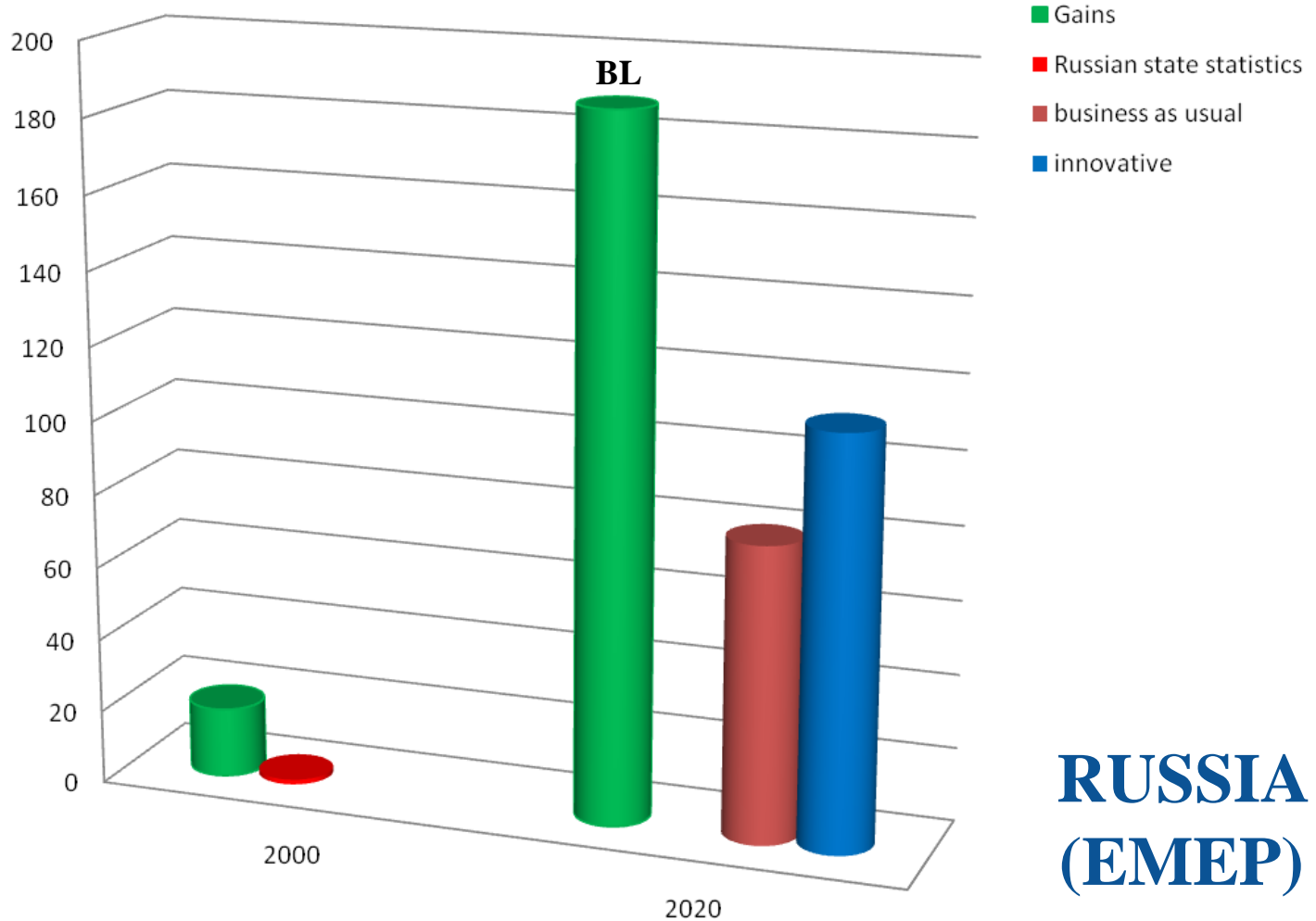
Priorities in budget spendings



Current environment protection oriented spendings, *Thousand of Roubles per year,* **RUSSIAN FEDERATION**



The emission control costs for air pollutants 10⁹ roubles



**RUSSIA
(EMEP)**



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THANK YOU FOR YOUR ATTENTION!

Дизайн - Центр "Минерал"