



Nuclear Energy Governance: Important Lessons from Russia and Belarus

RUSSIA



Kudankulam NPP in southern India



Soviet Nuclear Technology in the World

- ✱ Council for Mutual Economic Assistance (Eastern Bloc + communist states worldwide)
 - ✱ Ukraine, Lithuania and Czechoslovakia: points of entry into E Europe
- ✱ Western Europe: nuclear enrichment services
- ✱ USSR – France: breeder research cooperation
- ✱ USSR – US: collaboration on emergency operating procedures



Russian Nuclear Technology in the World

✧ Objectives

- ✧ Political influence and Russia's status in the world
- ✧ Revenues

✧ ROSATOM as the key actor

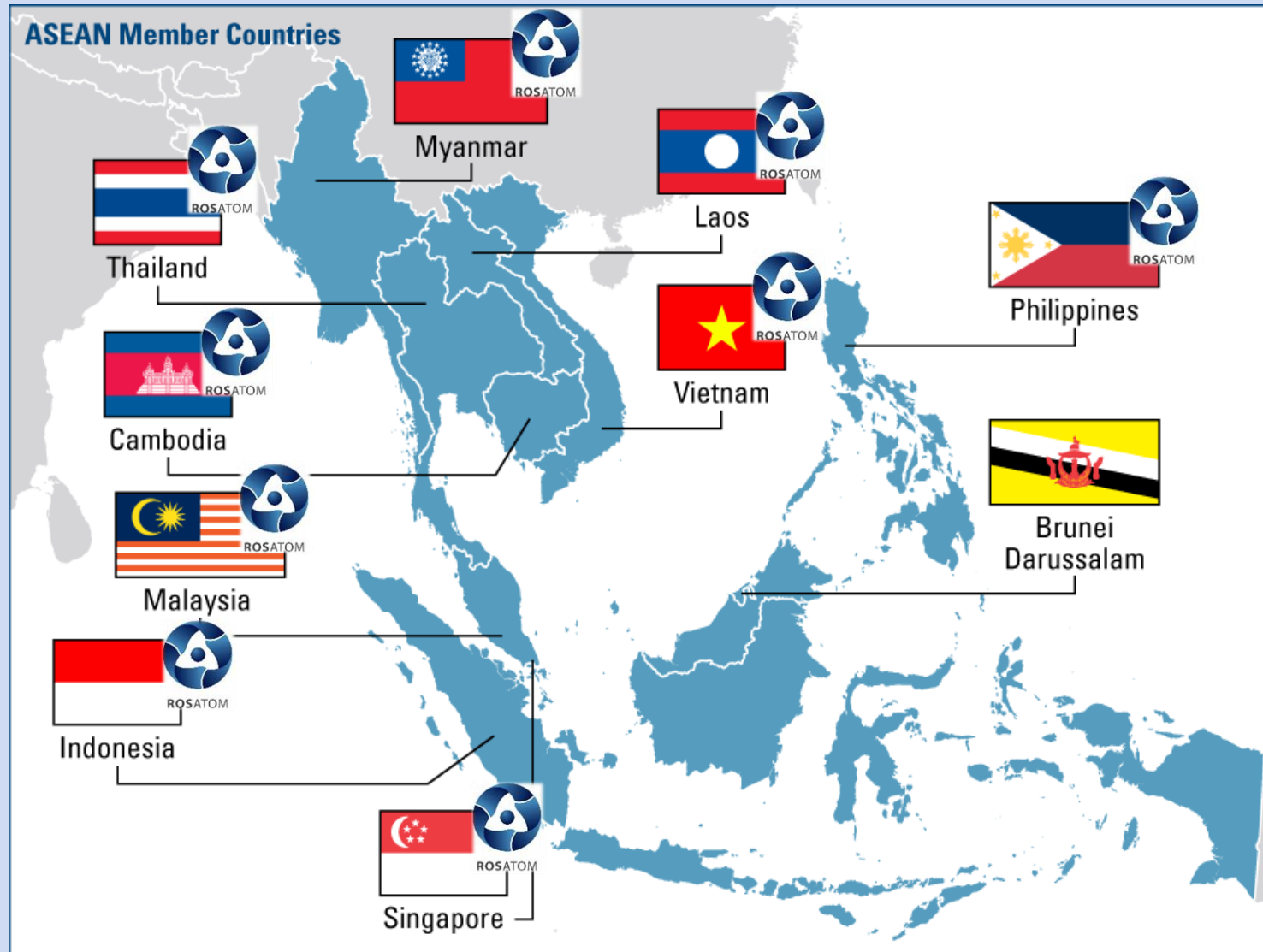
- ✧ 2011: Rusatom Overseas – 11 centers in >60 countries (December 2017)
- ✧ part of diplomatic and trade missions

✧ Strategy

- ✧ Three-tier legal framework
- ✧ Four financing options
- ✧ Complete nuclear fuel cycle



Russia – ASEAN Nuclear Energy Cooperation



What Lessons

- ⚛️ Why stepping on the same rake is difficult to avoid
- ⚛️ Sweeping problems under the rug works, but not for long
- ⚛️ Positive change is possible, but it takes time and effort
- ⚛️ International community can make a difference



Institutions: Habit is Second Nature

General State Characteristics:

- ✱ Ignore rules
- ✱ Informal relations
- ✱ Top-down, hierarchical
- ✱ Unquestionable authority
- ✱ Security is a top priority
- ✱ Leaders above the public

Nuclear Energy Sector Features:

- ✱ Ignore rules
- ✱ Informal relations
- ✱ Top-down, hierarchical
- ✱ Unquestionable authority
- ✱ Security is a top priority
- ✱ Leaders above the public



Nuclear Energy in the USSR/Russia

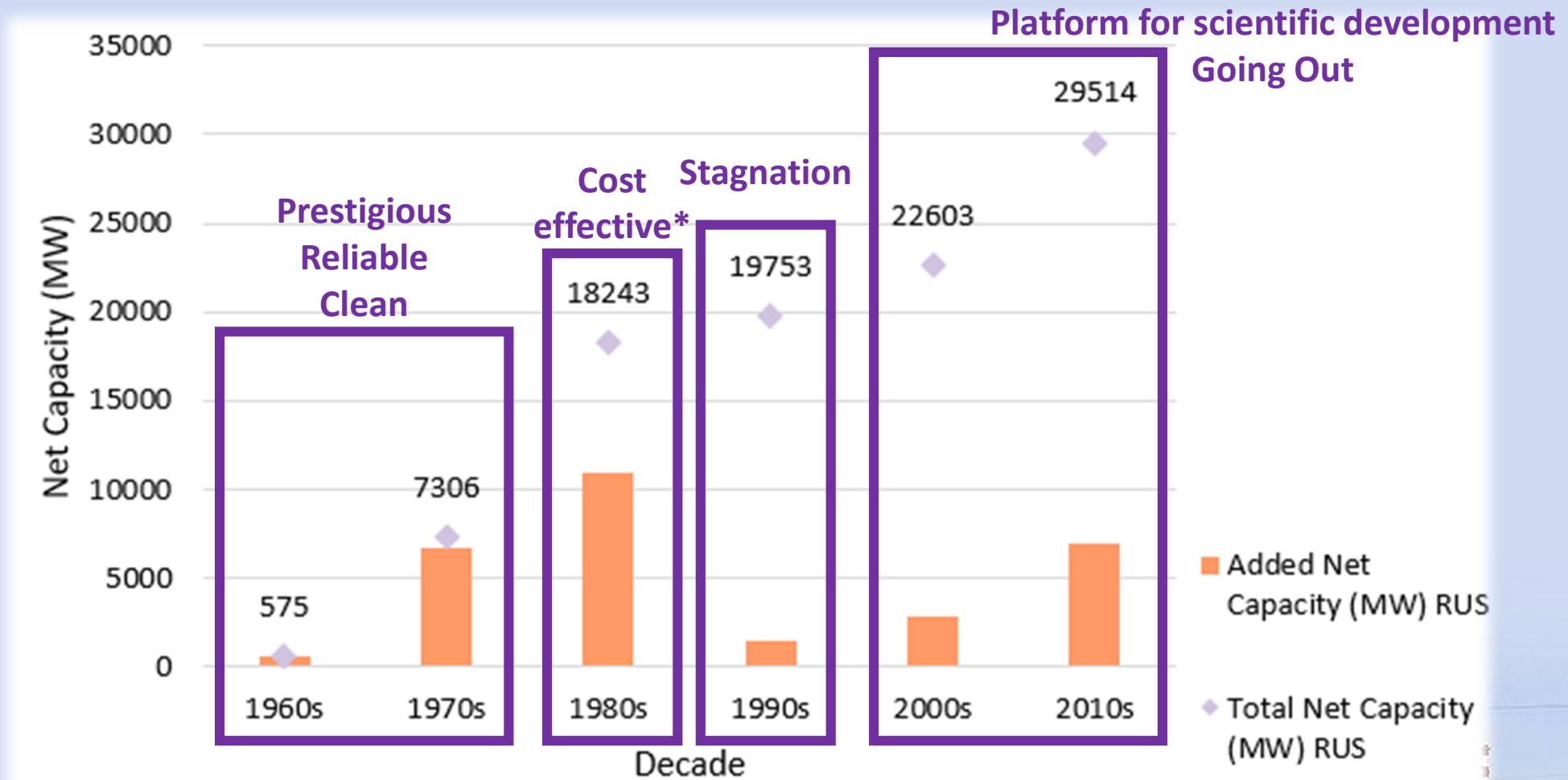


Figure 2: Nuclear Power Generation Capacity in Russia (1960 – 2018).¹²



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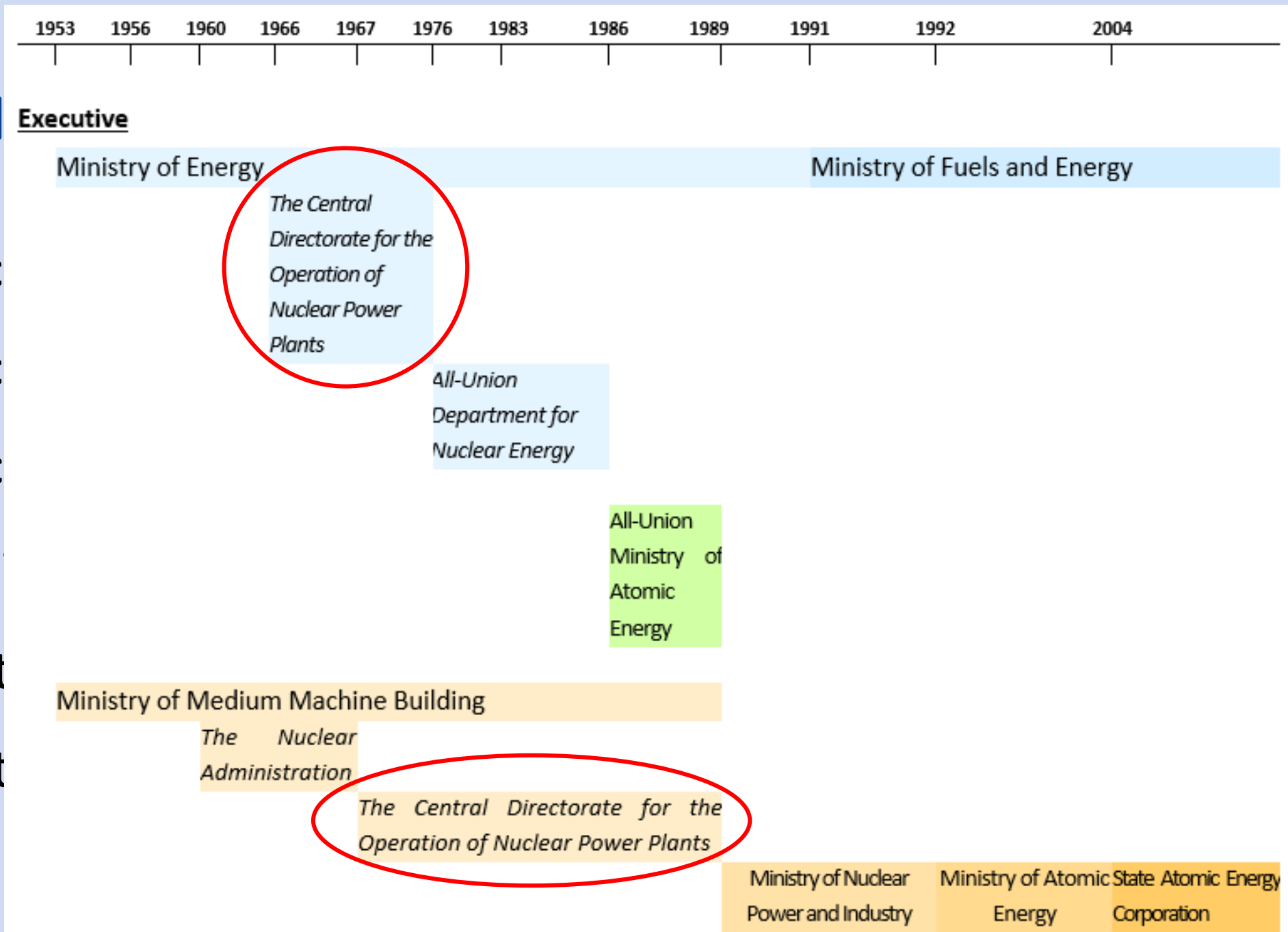


Table 3: *Legal Activity by Nuclear Regulator in the USSR and Russia (Federal Normative Documents in Force as of 10 October 2017).*

Topics	Before 1991	1991 - 2004	After 2004
General Norms and Rules	-	1	15
Nuclear Power Plants	3	5	21
Experimental/Research Reactors	3	2	9
Ships and Other Floating Facilities with Nuclear Reactors and Radiation Sources	-	1	7
Structures and Installations for Producing, Using, Processing, and Transporting Nuclear Fuel and Nuclear Materials; Storage Facilities for Nuclear Materials and Radioactive Waste; Radioactive Waste Disposal Sites; Industrial Reactors	-	2	19
Radiation Sources; Storage Facilities; Radioactive Materials and Waste	-	-	6
Transport of Nuclear Materials, Radioactive Materials and Waste	-	-	2
Physical Protection of Nuclear Facilities, Radiation Sources, Storage Facilities, Nuclear and Radioactive Materials; Accounting and Control of Radiation Sources, Radioactive Materials and Waste	-	-	7
Total	3	11	81

Notes: ¹ Regulatory body in charge by period: The State Nuclear Administration (before 1991); the State Atomic Inspection Agency (1991-2004); Federal Service for Ecological, Technological and Nuclear Supervision (after 2004).



ROSATOM and Regulator: Ongoing Competition

- ⚛ 2004: equal status of a 'federal service'
- ⚛ 2007: ROSATOM – **state corporation**
 - ⚛ more freedom than a gov't agency or a private entity
 - ⚛ not obliged to share info about its activities
 - ⚛ cannot go bankrupt
 - ⚛ its property is not government property
- ⚛ 2008: Regulator moved under Ministry
- ⚛ 2010: Regulator's independence restored
- ⚛ 2012: Regulator received additional responsibilities
- ⚛ 2017: new powers for ROSATOM
- ⚛ Salary Gap
- ⚛ Leadership Appointments



Evolving Safety Culture

✱ ‘safety’ and ‘security’

✱ Factors motivating changes:

✱ 1970s: Finland

✱ 1986: Chernobyl

✱ 2000s: federal programs for improving nuclear safety

✱ 2011: Fukushima

✱ ROSATOM’s initiatives



Evolving Safety Culture (Cont.)

- ✱ Public participation required by law since 2000
- ✱ 30 days to submit comments
- ✱ Additional initiatives by ROSATOM
 - ✱ annual reports: “stakeholder engagement” since 2010
 - ✱ ‘general public’ as a stakeholder since 2012
 - ✱ tours to facilities, educational and public outreach activities
 - ✱ social programs
 - ✱ online communication tools



Transparency and Public Opinion

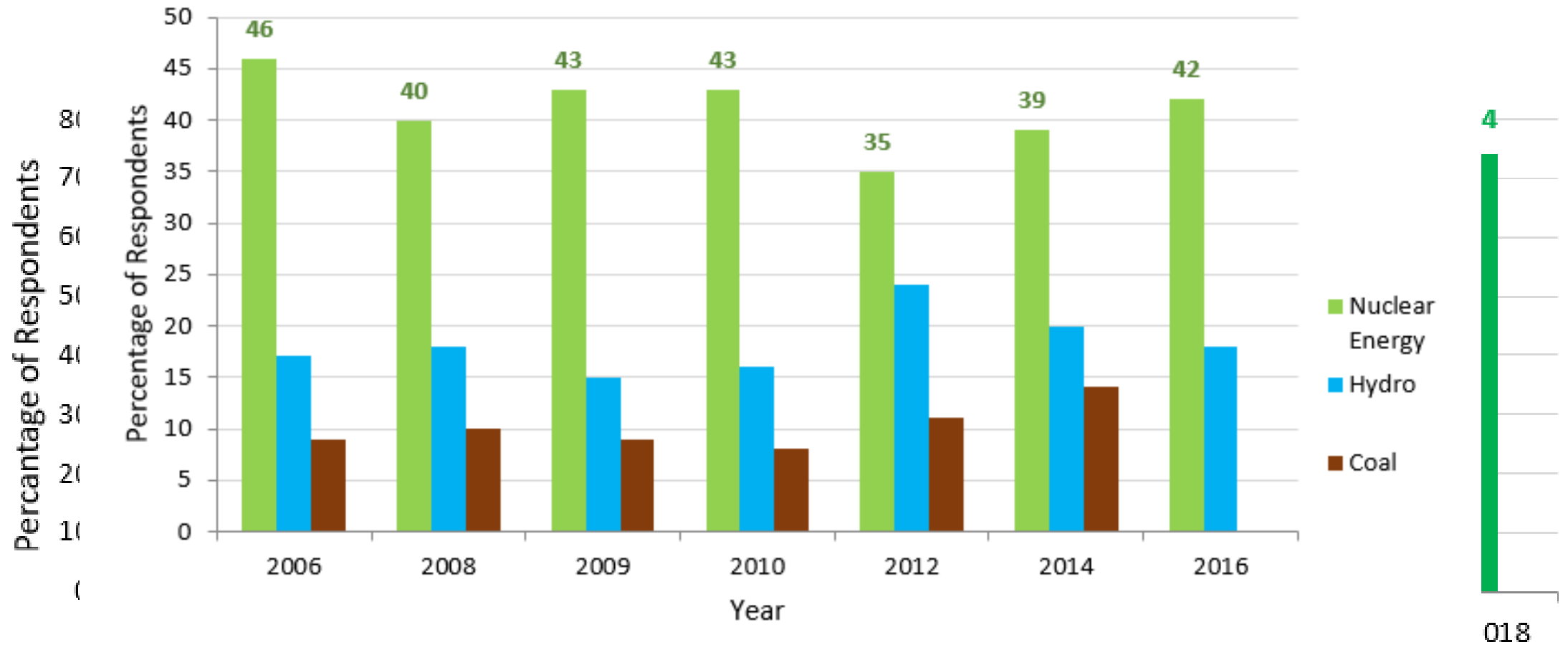


Figure 6: Opinion of the Russian Public on the Best Alternative to Oil and Gas (2006 – 2016).

Note: Question asked in the public opinion poll: 'If Russia runs out of oil and gas resources in the next 20 years, what can be the substitutes?'.

Figure

Role of Global Norms

- ✱ February 1985: USSR – IAEA cooperation began
- ✱ Russia is party to major international legal instruments
 - ✱ 1987: Convention on Early Notification of a Nuclear Accident
 - ✱ 1996: Convention on Nuclear Safety
 - ✱ 2005: Vienna Convention (1963)
 - ✱ 2006: Joint Convention
- ✱ Implementation supported by bilateral agreements
- ✱ IAEA missions take place on a regular basis



Lessons Learnt: Summary

- ⚛ Nuclear safety has to be prioritized from the start. Otherwise, potential improvements are slowed down by institutional memory/legacy
- ⚛ Safety culture is more complex than adherence to technical standards and needs cultivation, enforcement and monitoring.
- ⚛ There is no need to reinvent the wheel. Collective experiences of mature nuclear countries are represented in the international guidelines. Newcomers can learn from their mistakes



Questions?



BELARUS



Belarusian NPP under construction

What's so special about Belarus?



Lithuania's Concerns

- ⚛ Non-compliance with major IAEA safety norms
- ⚛ Non-compliance with the Espoo environmental rules
- ⚛ Politically motivated decision and Russian influence



Key Facts: Belarus Nuclear Programme (1)

⚛ national energy strategy: supply diversification

⚛ 1998: 10y moratorium on nuclear construction

⚛ 2006: “national security” issue

⚛ Aug 2007: O&G supply dispute with Russia

⚛ Sep 2007: energy strategy with nuclear in the mix

⚛ Jan 2008: NPP construction approved



Key Facts: Belarus Nuclear Programme (2)

⚛ Other factors beyond supply diversification

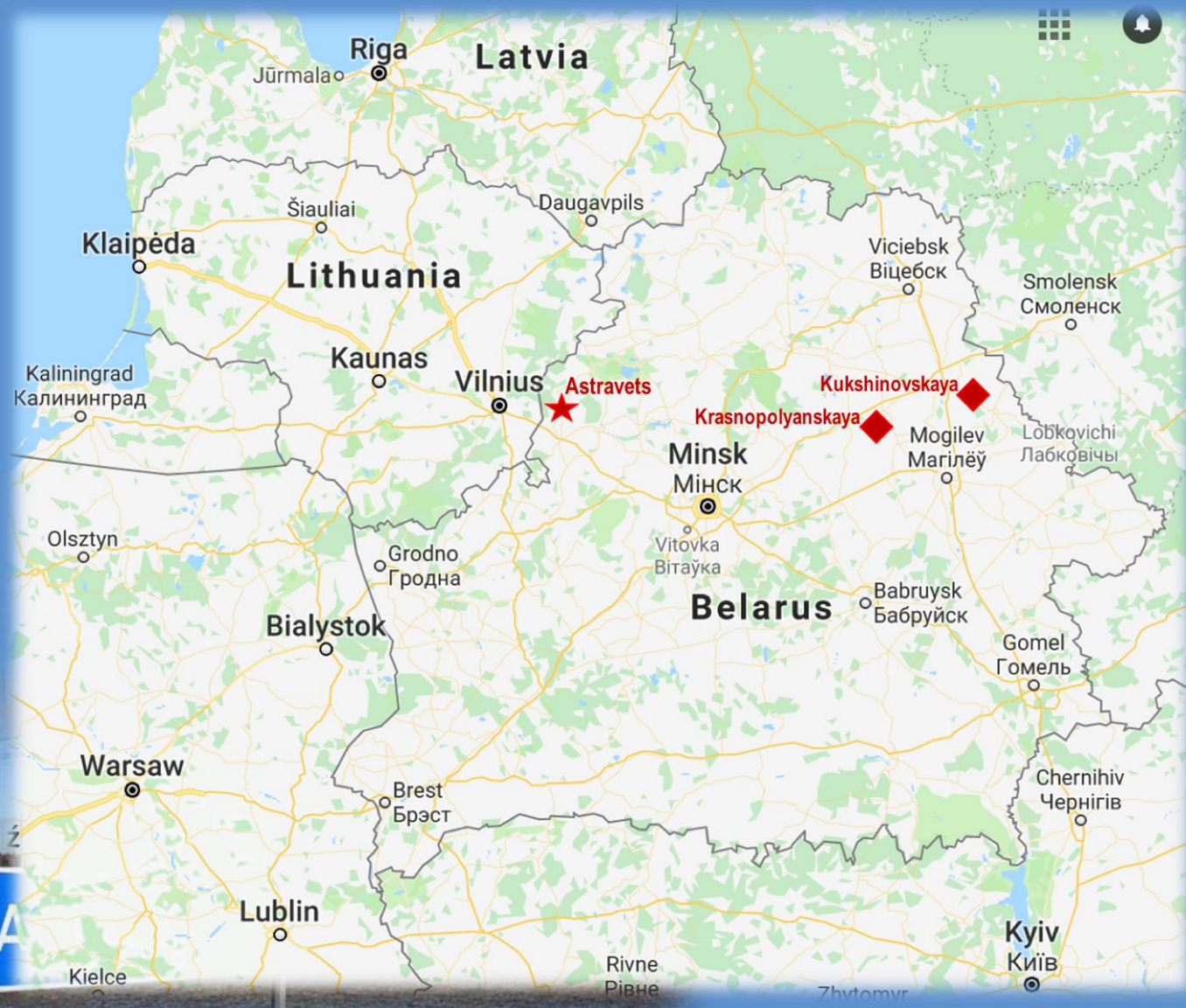
⚛ Climate change mitigation

⚛ Economic benefits

⚛ Electricity exports



Location. Location. Location.



40km from Vilnius

25km from
Lithuanian border

Table 1: Belarus's International Commitments in the Area of Nuclear Safety and Security

International Treaty	Ratification Date
Convention on Early Notification of Nuclear Accident, and Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency	December 18, 1986
Treaty on Non-Proliferation of Nuclear Weapons	February 4, 1993
Convention on Physical Protection of Nuclear Material	June 14, 1993
Vienna Convention on Civil Liability for Nuclear Damage	November 11, 1997
Convention on Nuclear Safety	1999
Convention on Access to Information, Public Participation in Dec-Making and Access to Justice in Environmental Matters (Aarhus Convention)	December 14, 1999
Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management	July 17, 2002
Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention)	October 20, 2005 ⁴¹

* Provisional date

Site Selection: Astravets

- ⚛ The best geological features and water supply
- ⚛ Accessible by roads
- ⚛ No villages in close proximity
- ⚛ Seismic activity is high, but within recommended parameters and compatible with plant design
- ⚛ Fits the purpose of electricity exports



Lithuania's Concerns: Safety

- ⚛ IAEA recommendation: 100km
- ⚛ Recommendation developed in 2013
- ⚛ Further actions:
 - ⚛ statements by politicians
 - ⚛ publicizing NPP construction safety record



Lithuania's Concerns: Environment (1)

- ☢ 2011: submission to the Espoo Implementation Committee
- ☢ 2018: the Committee “decided exceptionally to examine” the EIA procedure on its own and with the help of experts
- ☢ February 2019: Committee’s draft decision (8 years later)



Lithuania's Concerns: Environment (2) [2013]

❖ EIA legislation in Belarus

❖ “no explicit legal provision regulating the final decision... [but] no grounds to conclude that there was a systemic inconsistency”

❖ Notification

❖ “Belarus is not in non-compliance”

❖ EIA documentation

❖ “Belarus is in non-compliance”



Lithuania's Concerns: Environment (3) [2013]

✧ Public participation

✧ “Belarus had started the consultation at an early stage and before the final decision concerning the site selection was taken”

✧ Consultations

✧ “Belarus is not yet in full compliance”

✧ Alternative sites

✧ “Belarus is not yet in full compliance”

✧ Final decision

✧ Location approved without “taking into account the requirements of the Espoo Convention”



Lithuania's Concerns: Environment (4) [2019]

- ✱ “Belarus had taken all the required procedural steps to reach the final decision on the planned activity, as provided for in the Convention”
- ✱ EIA “makes reference to locational alternatives... but does not provide sufficient” justification
- ✱ Belarus failed to comply with certain articles of the Convention
- ✱ Belarus is urged “to ensure that, in... any future decision-making... the Convention is applied” properly



Lithuania's Concerns: National Security

- ⚛ Jun 2017: Lithuania adopted a law declaring the NPP a national security threat
 - ⚛ no electricity!
- ⚛ Dec 2017: wary of Russian military involvement
- ⚛ Belarus will still be dependent on Russia



Lesson

☉ Countries
neighboring

☉ International
role and
transformation



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БЕЛАРУСКАЯ АЭС ➔

expresso.pt

Questions?





Thank you