NEA
NUCLEAR ENERGY AGENCY

NEA SMR Dashboard

Second Edition

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US NRC RIC, Washington DC, 14 March 2024

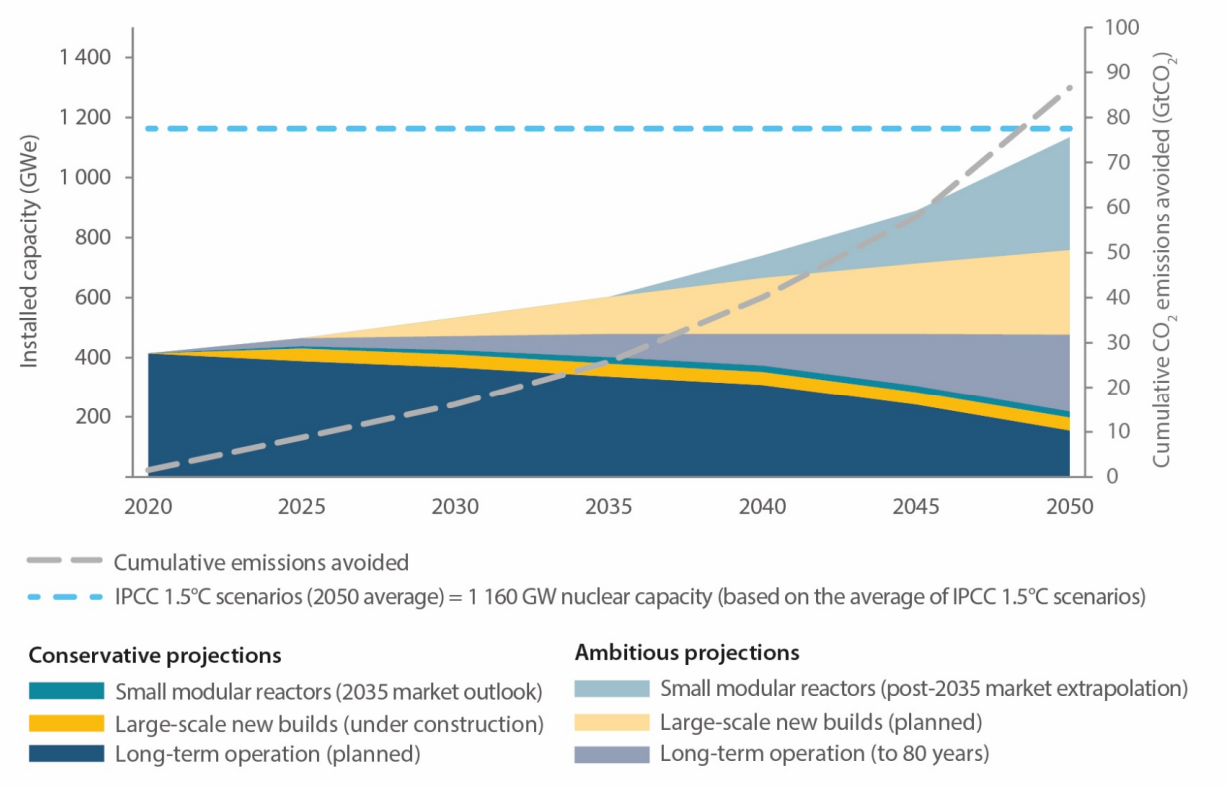
Global installed nuclear capacity needs to triple by 2050 for Net Zero

Reaching the target of tripling global installed nuclear capacity by 2050 will require a combination of:

1. **long-term operation**
2. **large-scale new builds**
3. **small modular reactors**
4. **non-electric applications**

(NEA 2022)

Full potential of nuclear contributions to Net Zero



Roadmaps to New Nuclear international conference

28-29 September 2023, OECD Conference Centre

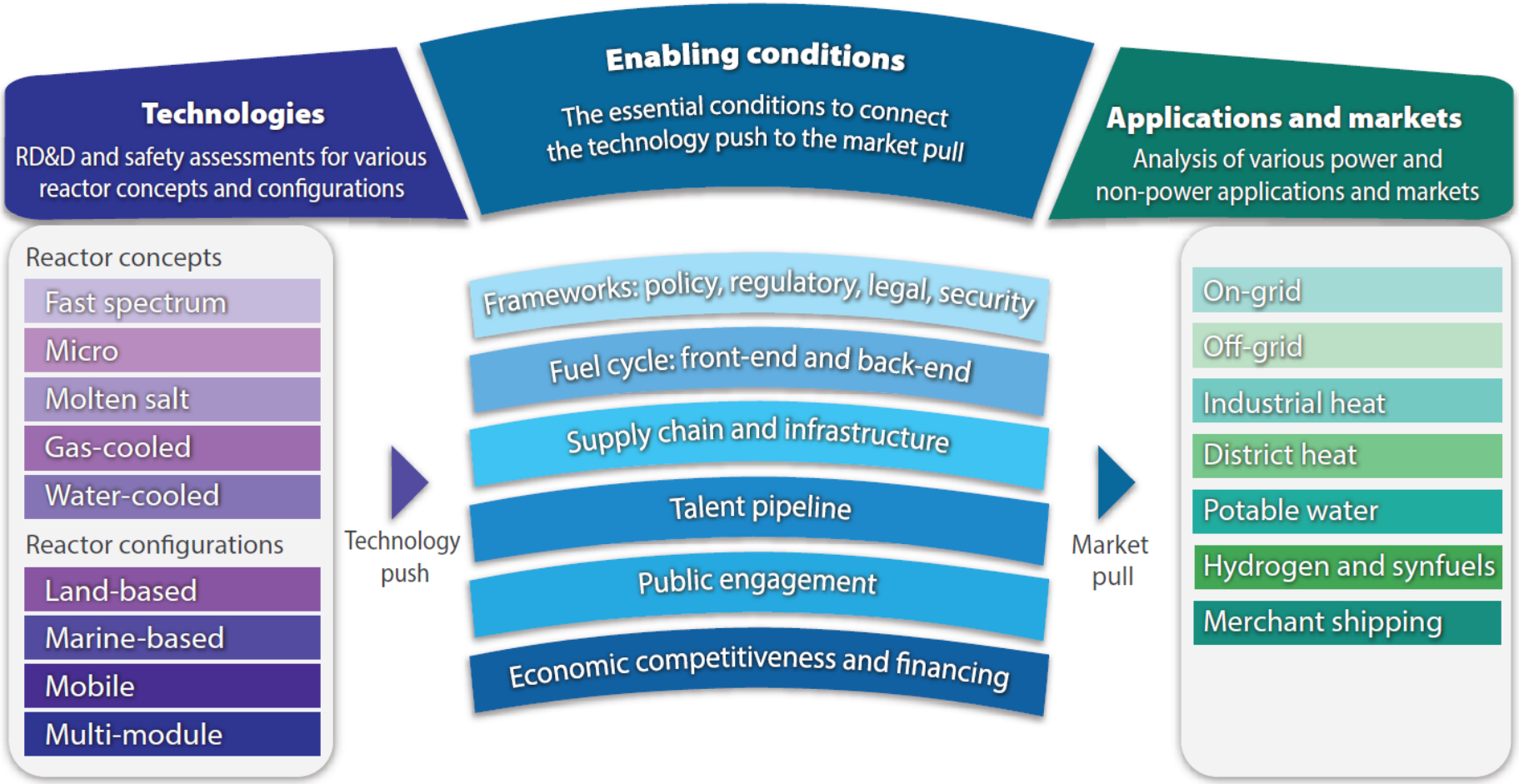
- In the lead-up to **COP28**, energy ministers from 20 countries issued a **joint communiqué** as ***"call to action and guiding principles in support of roadmaps for nuclear energy "*** **further** *"calling on the NEA to coordinate with stakeholders to develop and support […] solutions-oriented approach to support decision-makers in maximizing the full potential of nuclear energy"*
- This call to action was also echoed **in** an **industry communiqué**

COP28 Ministerial Declaration on Tripling Nuclear Energy by 2050

- 25 nations committing during COP28 to tripling nuclear energy by 2050

- Referenced NEA analysis that demonstrates the need to triple nuclear energy and a pathway to achieve this target
- Emphasis on the role of Multinational Development Banks (MDBs) and International Developmental Finance Institutions (IFIs)

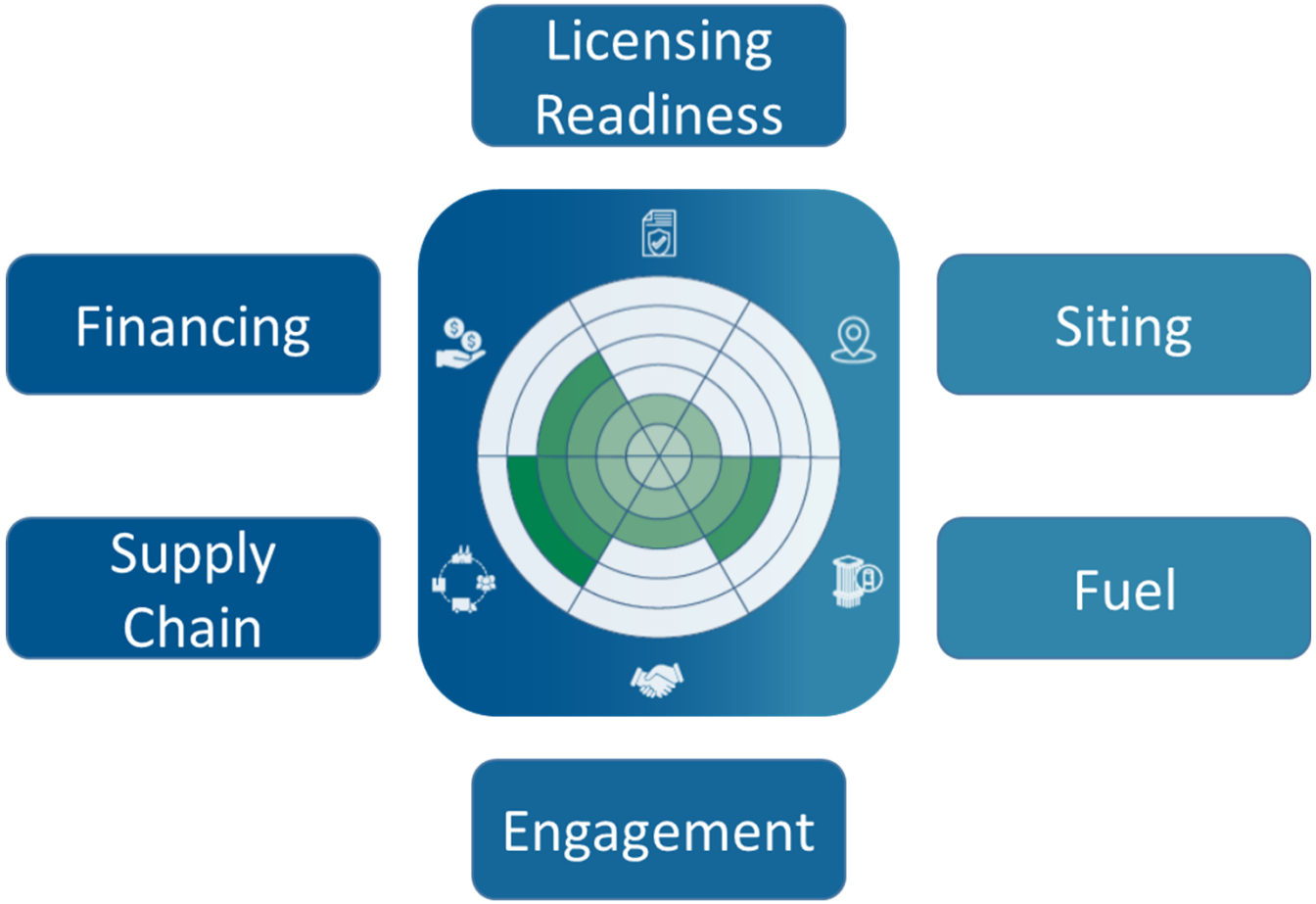
NEA SMR Strategy: Enabling Conditions



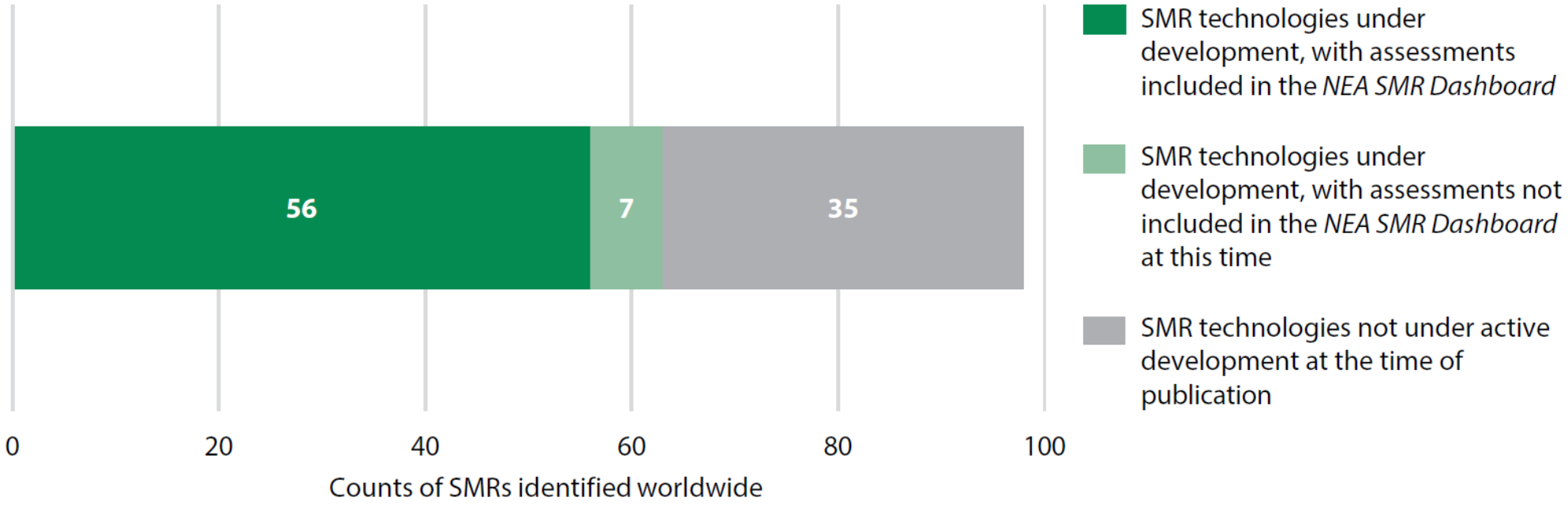
https://www.oecd-nea.org/jcms/pl_26297/the-nea-small-modular-reactor-smr-strategy

Tracking Progress: *Six new indicators by NEA*

- "Technology readiness level" is useful, but only reveals part of the picture
- NEA defines six additional indicators of progress
- With NEA's new indicators, the picture becomes clearer



The Most Comprehensive Assessment to Date of Global Progress towards SMR Commercialization



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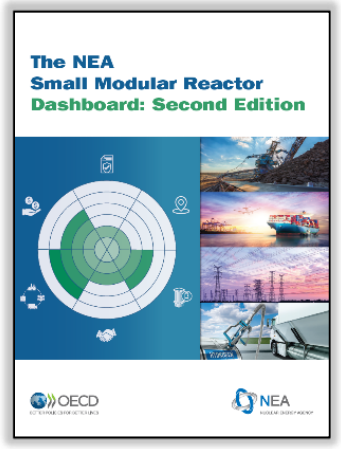
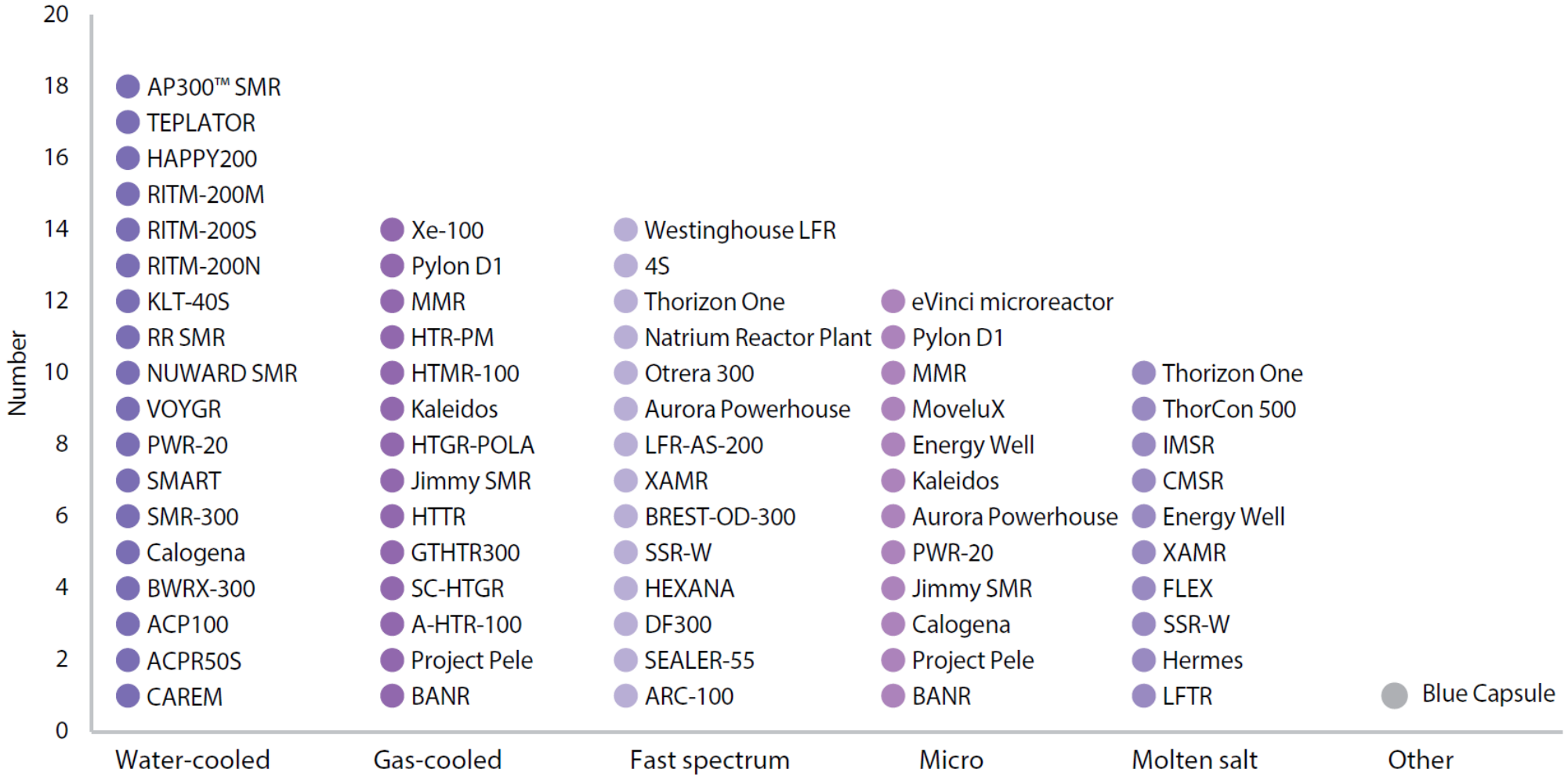
Launched on 29th February 2024 on the margins of the
Canadian Nuclear Association 2024 Conference in Ottawa, Canada.

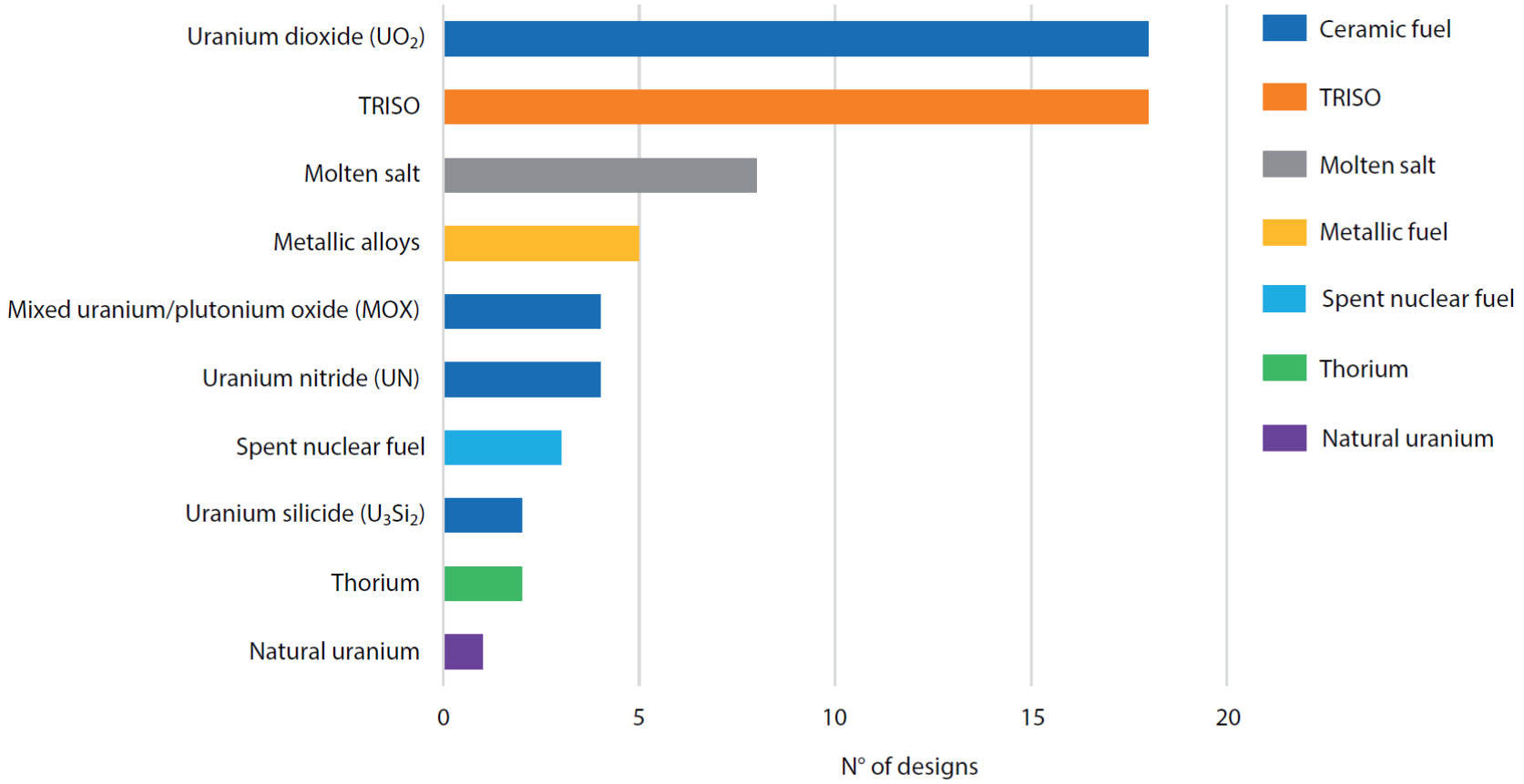


The logos represented were preferentially sourced from the websites dedicated to the SMR or the design organisation associated with the SMR. Minor modifications were applied related to sizing and colouring

Reactor Concepts

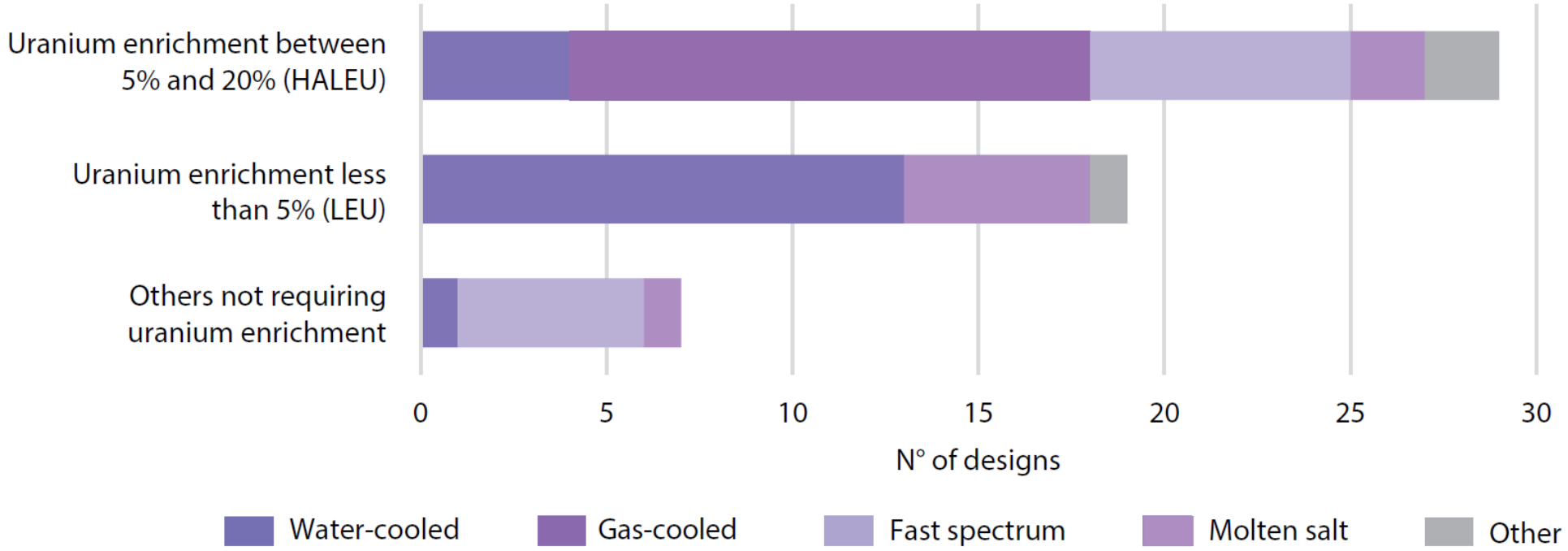


SMR Fuel Types

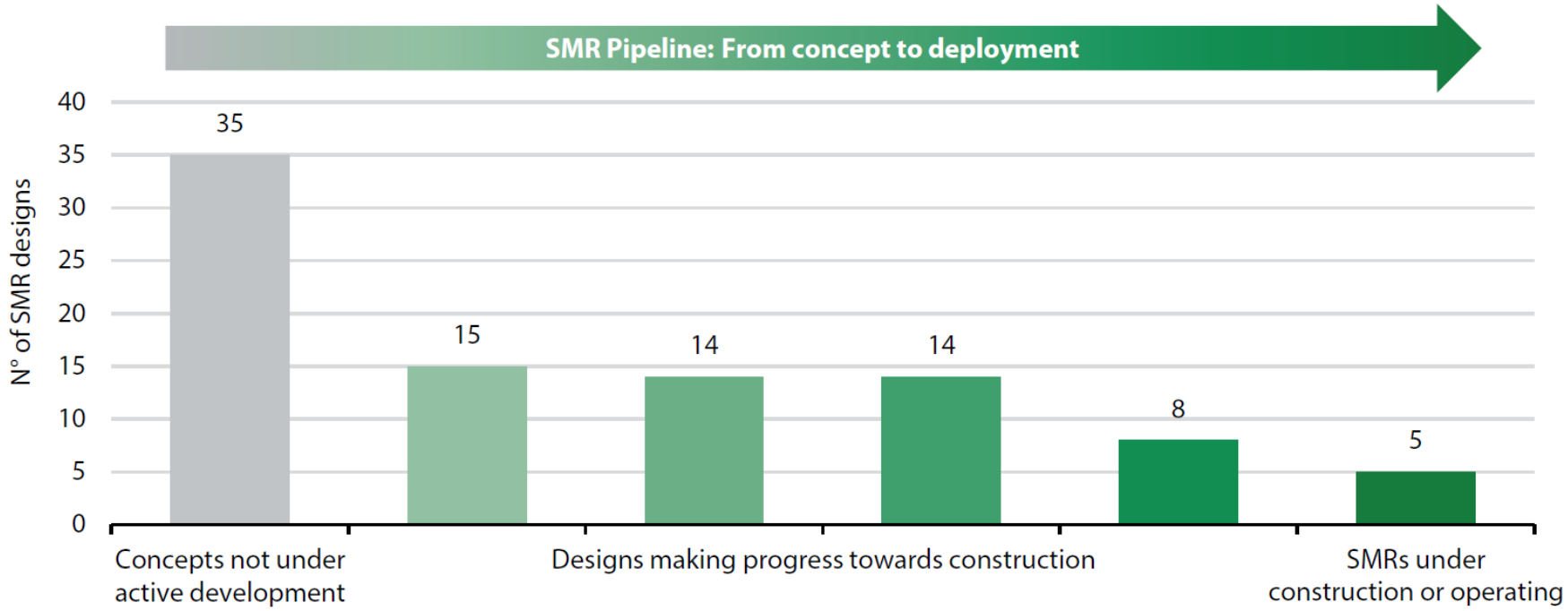


Note: Note: TRISO=tri-structural isotropic particle fuel; some designs can use different types of ceramic fuels (UO_2, MOX, UN, and U_3Si_2).

SMR Uranium Enrichment Requirements

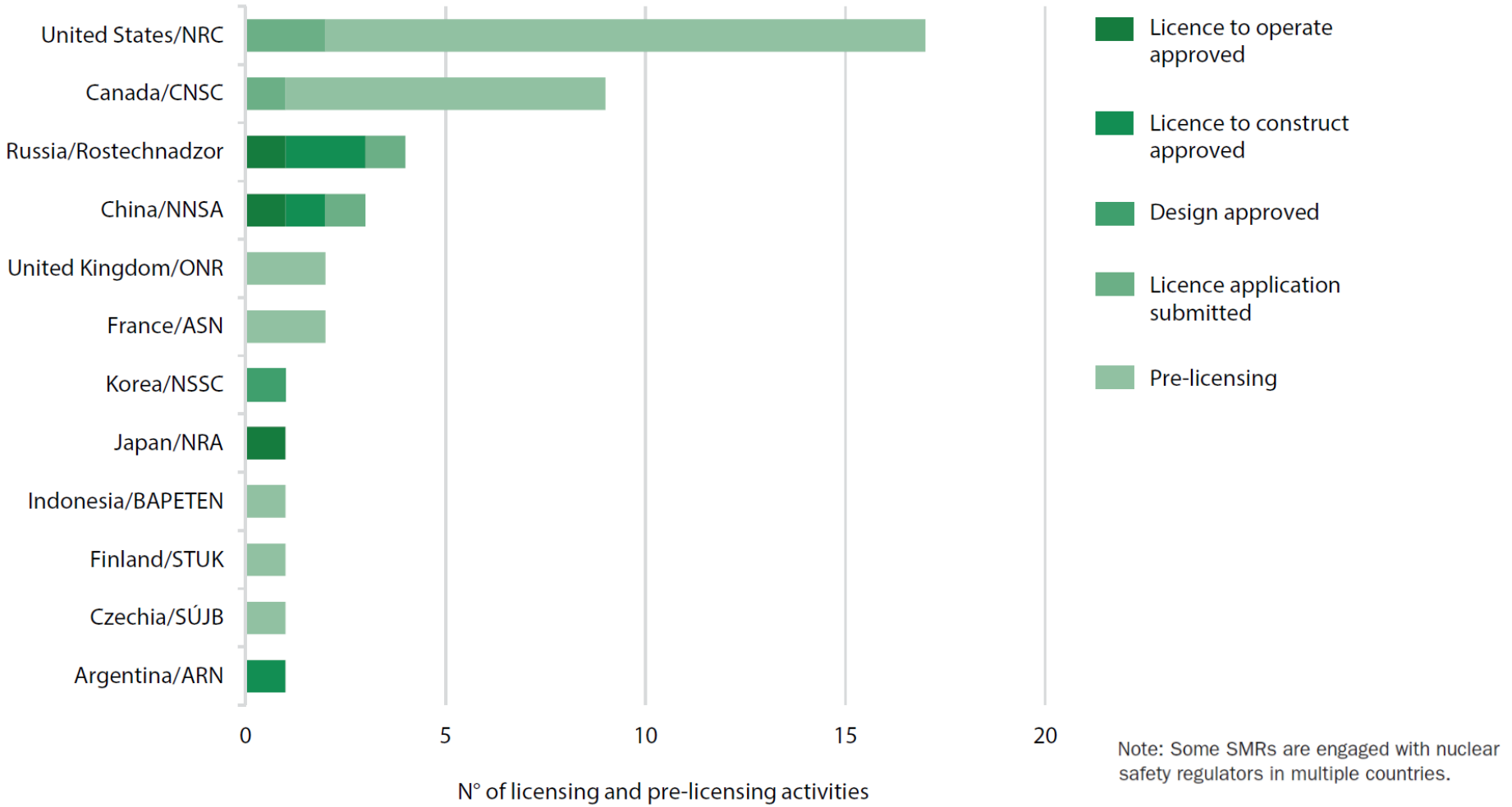


SMR Pipeline: Progress from Concept towards First Commercial Deployment



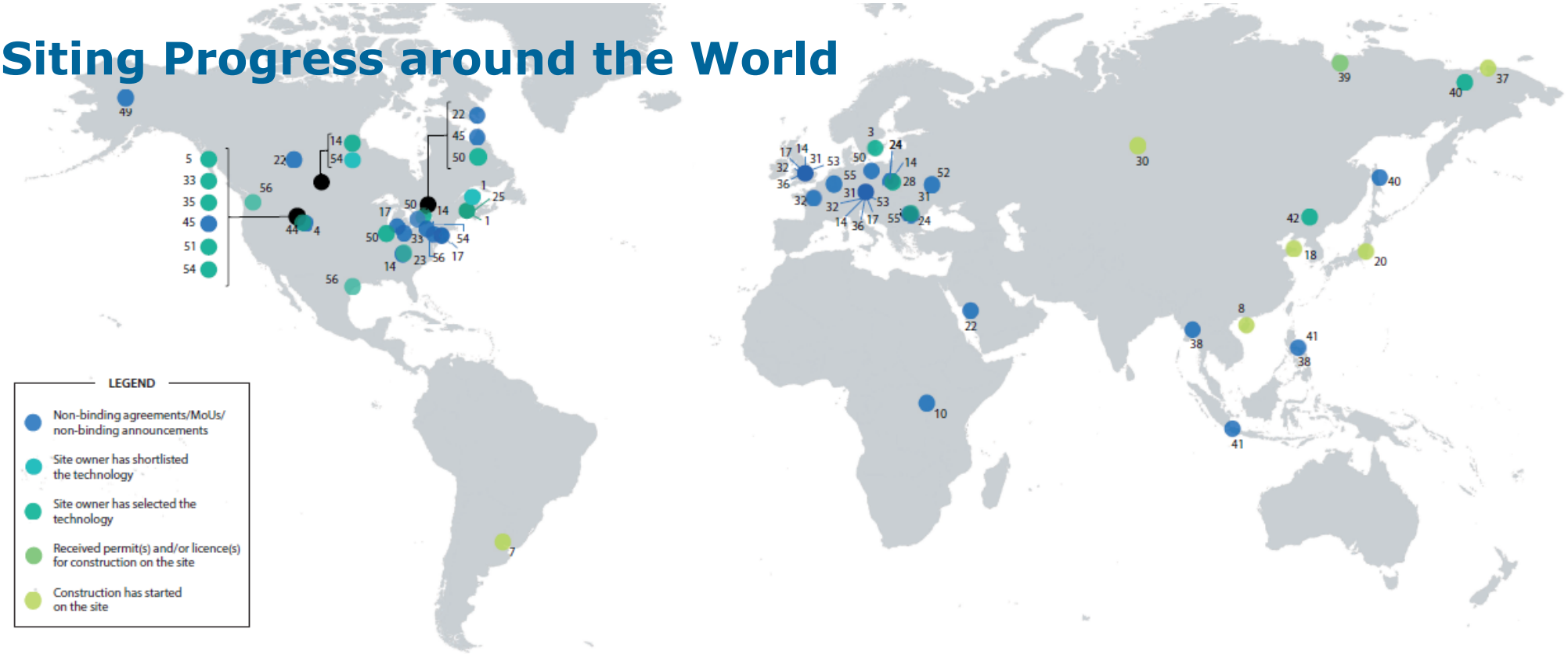
✓ A few designs are already operating, and there is a robust pipeline of SMRs making progress towards first-of-a-kind deployment.

Licensing Progress around the World



Note: Some SMRs are engaged with nuclear safety regulators in multiple countries.

Siting Progress around the World



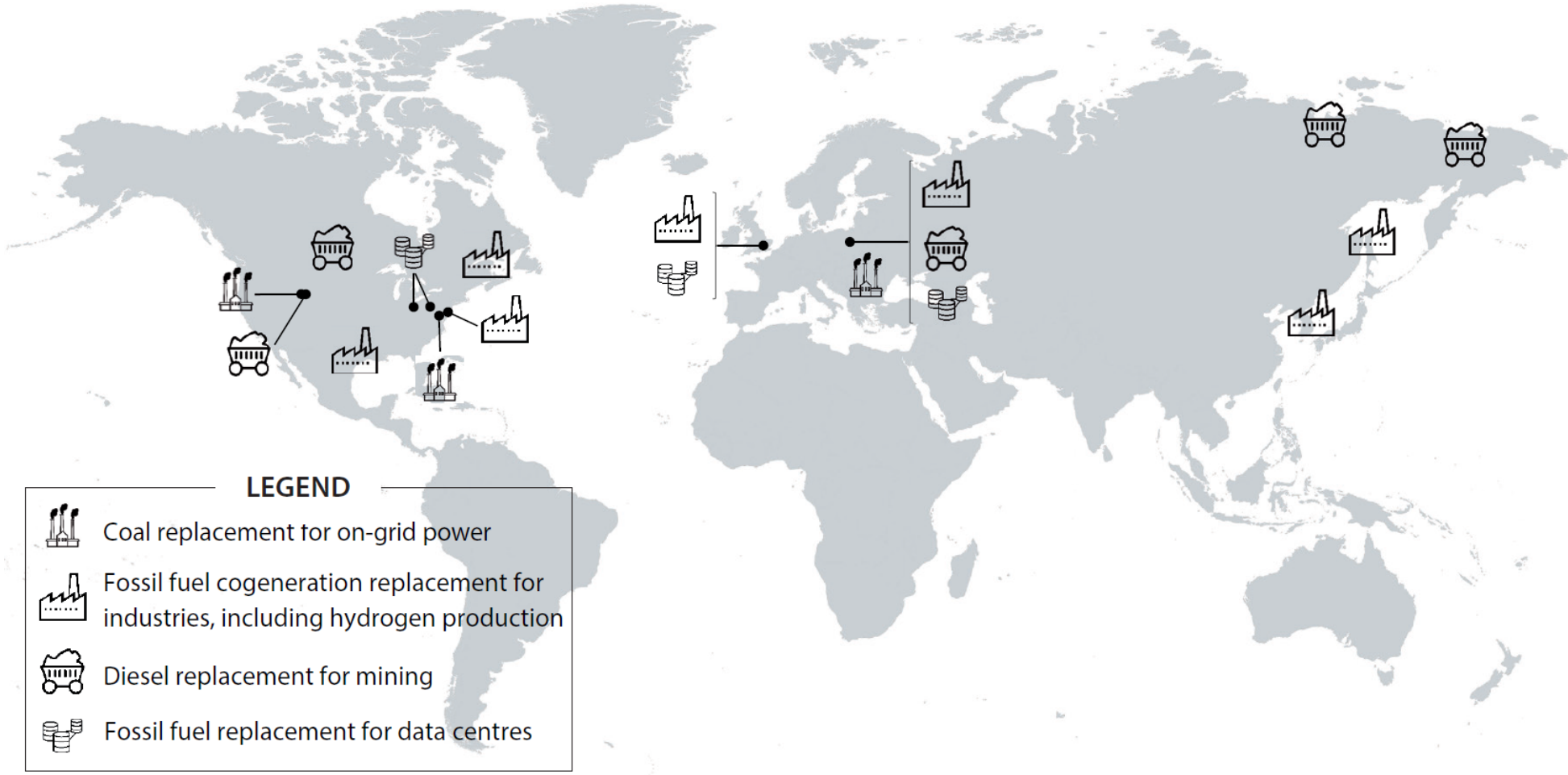
1	ARC-100	ARC Clean Technology
2	Blue Capsule	Blue Capsule Technology
3	SEALER-55	Blykalla
4	BANR	BWXT
5	Project Pele	BWXT
6	ACPR50S	CGN
7	CAREM	CNEA
8	ACP100	CNNC
9	Energy Well	CVR
10	DF300	Dual Fluid Energy
11	A-HTR-100	Eskom
12	LFTR	Flibe Energy
13	SC-HTGR	Framatome
14	BWRX-300	GE Hitachi Nuclear Energy

15	Calogena	Gorgé
16	HEXANA	Hexana
17	SMR-300	Holtec International
18	HTR-PM	INET
19	GTHTR300	JAEA
20	HTTR	JAEA
21	Jimmy SMR	Jimmy
22	SMART	KAERI
23	Hermes	Kairos Power
24	PWR-20	Last Energy
25	SSR-W	Moltex Energy
26	FLEX	MoltexFLEX
27	XAMR	NAAREA
28	HTGR-POLA	NCBJ

29	LFR-AS-200	*newcleo*
30	BREST-OD-300	NIKIET
31	VOYGR	NuScale Power
32	NUWARD SMR	NUWARD
33	Aurora Powerhouse	Oklo
34	Otrera 300	Otrera Nuclear Energy
35	Kaleidos	Radiant Industries
36	RR SMR	Rolls-Royce SMR
37	KLT-40S	ROSATOM
38	RITM-200M	ROSATOM
39	RITM-200N	ROSATOM
40	RITM-200S	ROSATOM
41	CMSR	Seaborg Technologies
42	HAPPY200	SPIC

43	HTMR-100	Stratek Global
44	Natrium Reactor Plant	TerraPower
45	IMSR	Terrestrial Energy
46	ThorCon 500	ThorCon International
47	Thorizon One	Thorizon
48	MoveluX	Toshiba Energy Systems & Solutions Corporation
49	4S	Toshiba Energy Systems & Solutions Corporation
50	MMR	USNC
51	Pylon D1	USNC
52	TEPLATOR	UWB and CIIRC CTU
53	AP300™ SMR	Westinghouse Electric Company
54	eVinci microreactor	Westinghouse Electric Company
55	Westinghouse LFR	Westinghouse Electric Company
56	Xe-100	X-energy

Examples of Sites of Near-term Emerging Markets for SMRs



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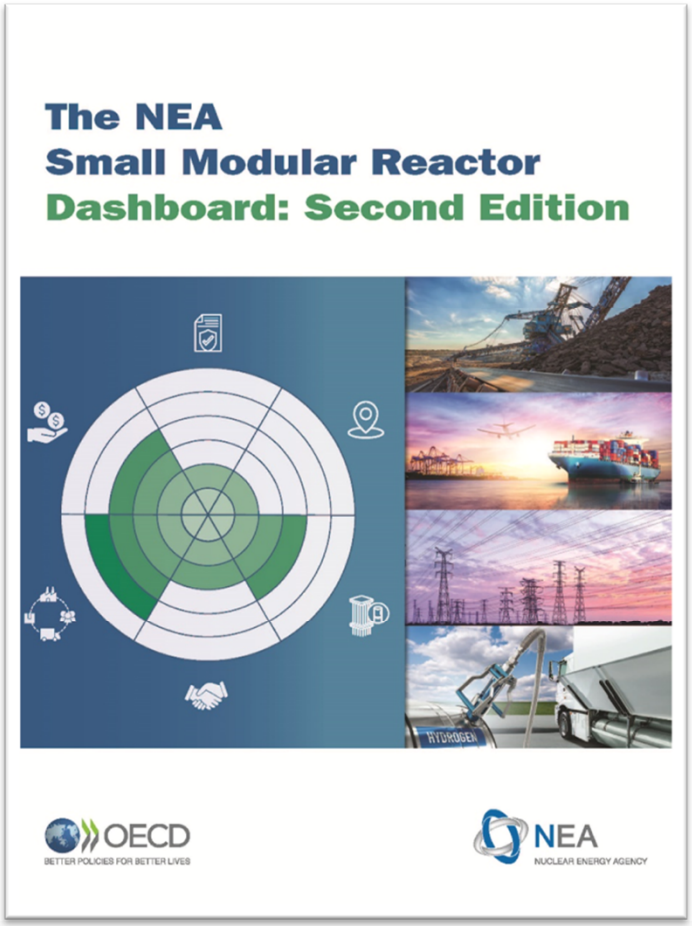

www.oecd-nea.org/SMR-Dashboard-2nd-edition