Nuclear Energy Advocacy

Briefing to the Leadership in Nuclear Energy Commission

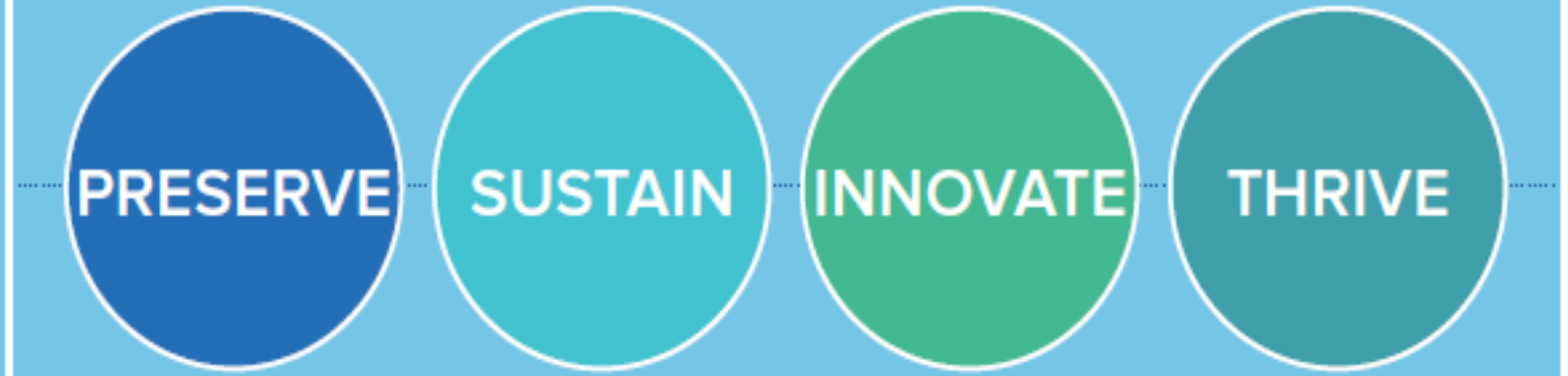
John F. Kotek
Nuclear Energy Institute

January 23, 2019

NATIONAL NUCLEAR ENERGY STRATEGY

create the nuclear imperative

NUCLEAR NARRATIVE



BEST-IN-CLASS

Creating a Brighter Nuclear Future: The Essentials

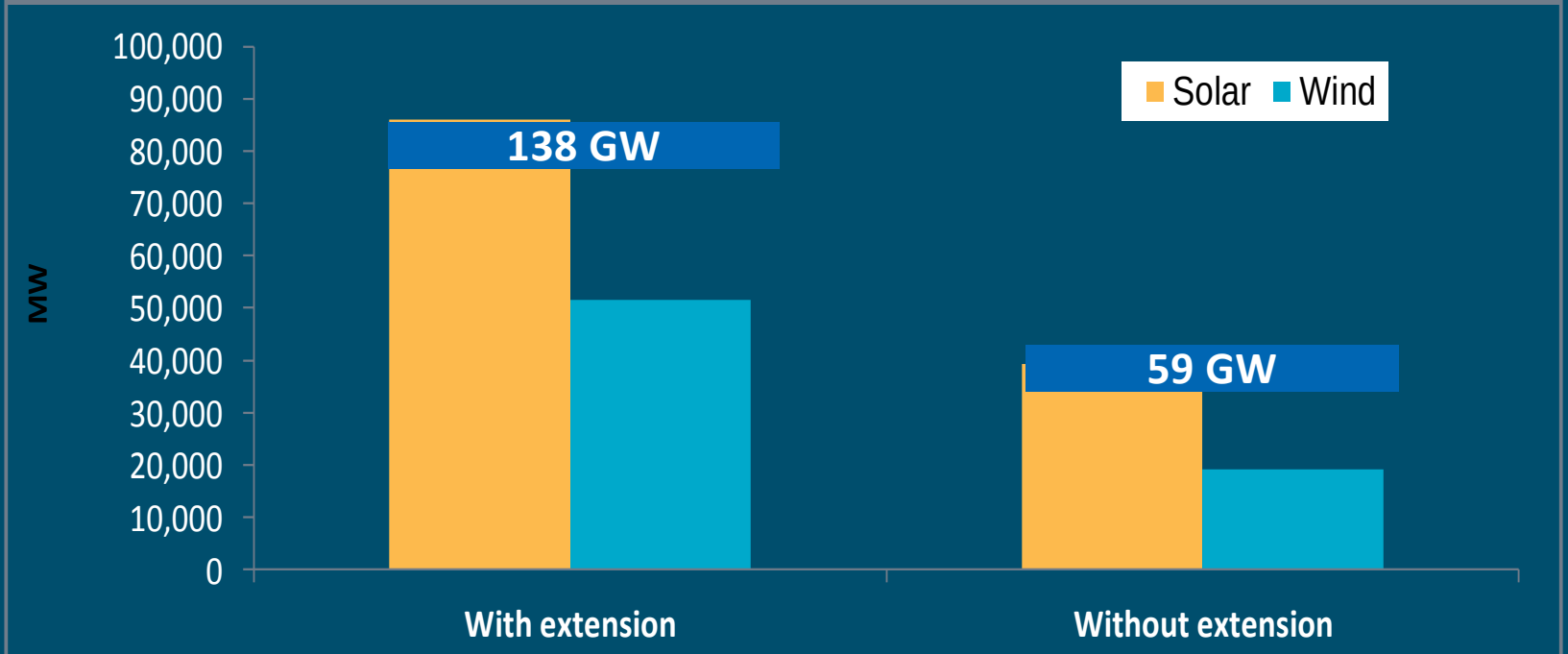
- Markets and policies that fully value what nuclear delivers
  - Current plants
  - New build
- Sustained successful operating of existing plants
  - Safe operations
  - Continually increasing operational efficiency
- Continued movement toward more risk-informed regulation

Creating a Brighter Nuclear Future: The Essentials

- Investment in RDD&D that preserves U.S. status as leading innovator
  - Cost-effective, flexible new designs
  - Advanced fuels, I&C, materials, construction/fab techniques, etc.
  - Preserve existing & add new capabilities
- Success in export markets
- Increased public acceptance/social license
  - Resolve back-end of the fuel cycle
  - New approaches to siting, public engagement

IMPACT OF FEDERAL POLICIES

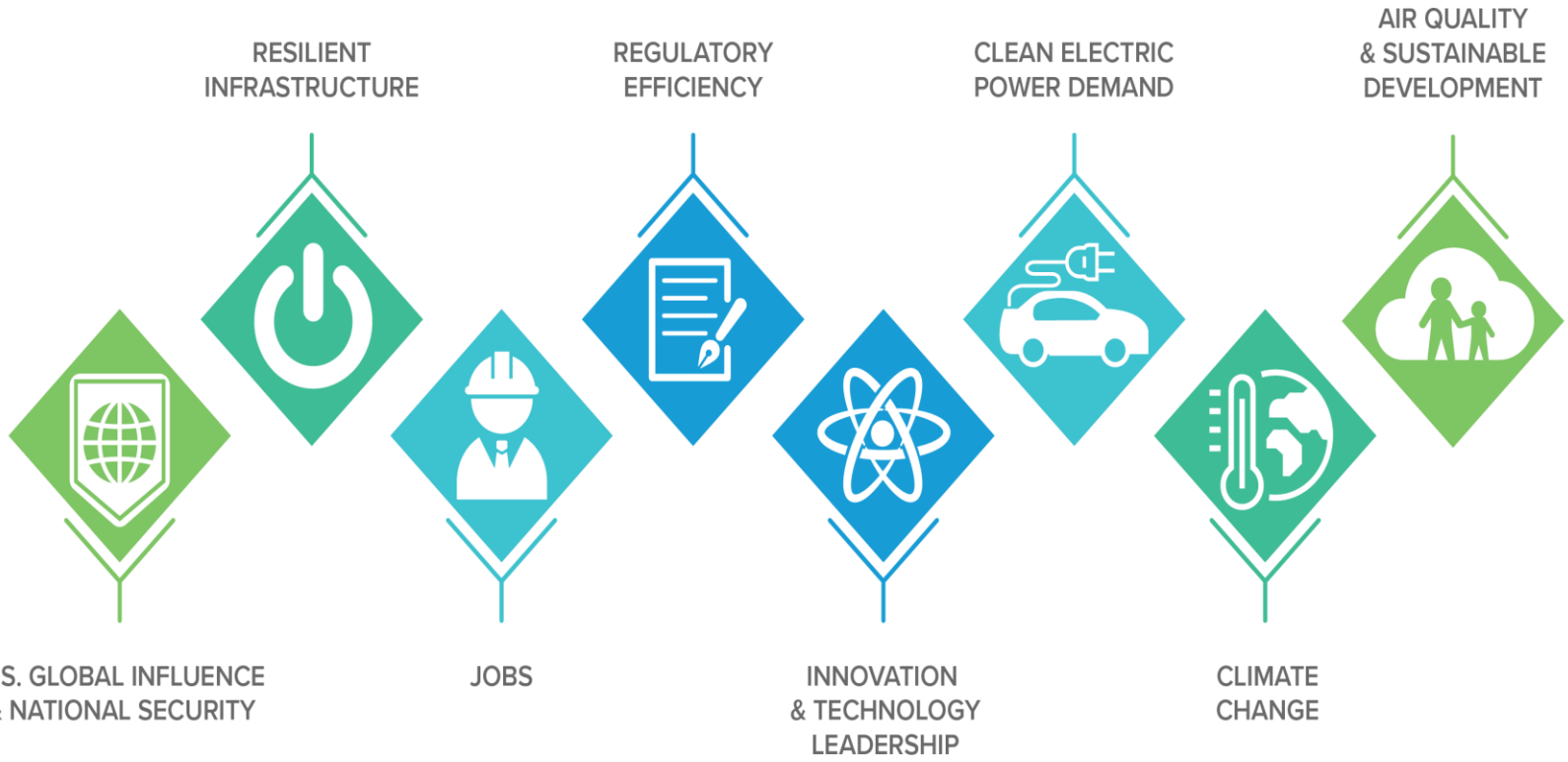
IHS outlook for cumulative wind and solar build with and without tax credit extension, 2016–22



Notes: Solar represents AC capacity.
Source: IHS

The extension of tax credits is expected to more than double combined wind and solar build from 2016 to 2022, from about 60 GW to about 140 GW

NUCLEAR IMPERATIVES



ADVANCING THE NUCLEAR NARRATIVE

The Nuclear Power Dilemma

Declining Profits, Plant Closu… of Rising Carbon Emissions

Steve Clemmer
Jeremy Richardson
Sandra Sattler
Dave Lochbaum

November 2018

Union of Concerned Scientists

Google

Moving toward 24x7 Carbon-Free Energy at Google Data Centers: Progress and Insights

Introduction

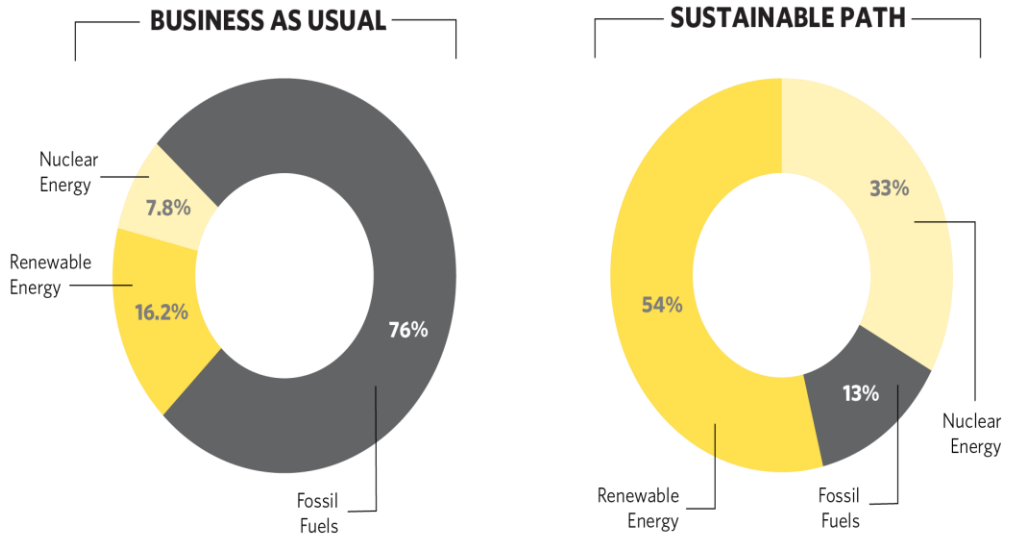
In recent years, Google has become the world's largest corporate buyer of renewable energy. In 2017 alone, we purchased more than seven billion kilowatt-hours of electricity (roughly as much as is used yearly by the state of Rhode Island[1]) from solar and wind farms that …uilt specifically for Google. This enabled us to match 100% of …nual electricity consumption through direct purchases of …able energy; we are the first company of our size to do so.

…ng our 100% renewable energy purchasing goal was an …ant milestone, and we will continue to increase our purchases …ewable energy as our operations grow. However, it is also just …ginning. It represents a head start toward achieving a much …r, longer-term challenge: **sourcing carbon-free energy for our …ions on a 24x7 basis.**

…g this challenge requires sourcing enough carbon-free energy …ch our electricity consumption *in all places, at all times*. Such …roach looks markedly different from the status quo, which, …e our large-scale procurement of renewables, still involves …n-based power. Each Google facility is connected to its regional … grid just like any other electricity consumer; the power mix in …egion usually includes some carbon-free resources (e.g. wind, …ydro, nuclear), but *also* carbon-based resources like coal, …l gas, and oil. Accordingly, we rely on those carbon-based …ces — particularly when wind speeds or sunlight fade, and also …es where there is limited access to carbon-free energy. Carbon-… not, around-the-clock electricity is the fuel that enables us to …uously deliver Google search results, YouTube video plays, …e Cloud Platform services, and much more without interruption.

A Changing Energy Portfolio

In order to both meet increased energy demand and keep the climate in safe boundaries, we'll need to alter our energy makeup to curtail emissions of carbon and other harmful chemicals.



Source: The Nature Conservancy, The Science of Sustainability, 2018

THE EMISSIONS REDUCTION IMPERATIVE

Supply chains + Add to myFT

Blue chips act to cut supply chain greenhouse gas emissions

Rolls-Royce, Nestlé and Panasonic among larger companies taking action

Michael Pooler JANUARY 29, 2018 2

anies taking serious action to tackle greenhouse gas
hains has doubled, according to research by an

ing Rolls-Royce, Nestlé and Panasonic were among
ith taking an "industry-leading" approach on the
ofit that collected data on behalf of 99 of the world's
ations.

THE WALL STREET JOURNAL.

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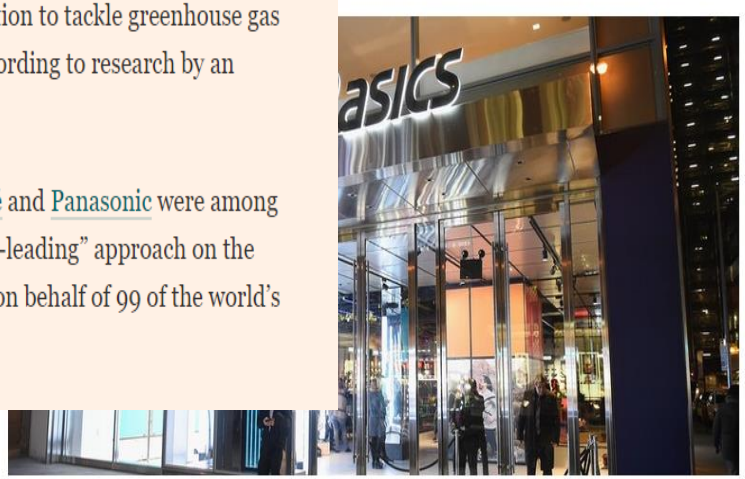
Levi's Plans to Slash Emissions in Global Supply Chain by 2025

The apparel giant aims to reduce greenhouse gas emissions at a sprawling set of factories and mills in 39 countries, sta
suppliers

Levi's will start its effort to cut greenhouse gas emissions through energy-efficiency programs at factories run by vendors in the first tier of its supply chain, such as this supplier facility in Mexico. PHOTO: PHOTO COURTESY OF LEVI STRAUSS & CO.

CONTENT

How to Provide F
Part 1
For tech companies, selli
reliable post-sales suppo



BRIEF

Asics plans to cut 55% of its supply chain carbon emissions

CHINA

RUSSIA

NEARLY 2/3 OF ALL

NUCLEAR POWER PLANTS UNDER CONSTRUCTION

USE

CHINESE OR RUSSIAN DESIGNS

Source: International Atomic Energy Agency: PRIS Database
Updated: March 2018

NEI

GROWING GLOBAL INFLUENCE

UNITED STATES

REUTERS

Business Markets World Politics Tech Commentary Breakingviews W

The Great Debate

Russia building nuclear reactors – and influence – around the globe

By Hannah Thoburn | April 29, 2015

Russian President Vladimir Putin (2nd L), his Egyptian counterpart Abdel Fattah al-Sisi (2nd R) and Russia's Defense Minister Sergei Shoigu (L) meet onboard a guided missile cruiser at the port of Sochi, August 12, 2014. REUTERS/Alexei Druzhinin/RIA Novosti/Kremlin

Russia has been notoriously brazen in using state-owned companies as instruments of national power. President Vladimir Putin's natural-gas wars with Belarus and Ukraine made headlines and sometimes left substantial parts of Europe in the cold. But Moscow's exploits in other energy-related areas have been less noticed.

GROWING GLOBAL INFLUENCE

Modi, Putin agree to expand nuclear power plant, push defence ties

India and Russia signed five pacts, including a crucial agreement on setting up two more atomic power plants at Kudankulam

Last Published: Thu, Jun 01 2017. 11 33 PM IST

Elizabeth Roche

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The pact is seen as a major outcome of the talks between Prime Minister Narendra Modi and Russian President Vladimir Putin. Photo: Grigory Dukor/Reuters

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- Javadekar hints at implementing SC, S quota in private col and universities too
- PM Narendra Modi s LDF govt over Saba issue
- India strongly cond bomb attack in Kab
- Saudi Arabia urges

GROWING GLOBAL INFLUENCE

Pakistan PM Nawaz Sharif Inaugurates Chinese-Assisted Nuclear Power Plant

World | Press Trust of India | Updated: December 28, 2016 16:25 IST

Pakistan PM Nawaz Sharif thanked China for extending cooperation in nuclear field. (File)

ISLAMABAD: Power-starved Pakistan today received a major boost as a China-backed 340 MW nuclear power plant, Chasma-III, in its Punjab province was inaugurated by Prime Minister Nawaz Sharif who termed it as a milestone in the government's efforts to end the menace of load shedding. The Chashma-III plant is located at Chashma in Mianwali district

WHY? A CENTURY-LONG RELATIONSHIP

Cooperation on:

Reactor system procurement

Operator training

Regulatory capacity

Construction quality & safety

Environmental protection

Cooperation on:

Physical security
Cybersecurity
Nuclear material protection & accountability
Nuclear nonproliferation
Supply of fuel & services
Research & development
Workforce development
Nuclear materials transportation
Operational safety & performance
Safety regulation

Cooperation on:

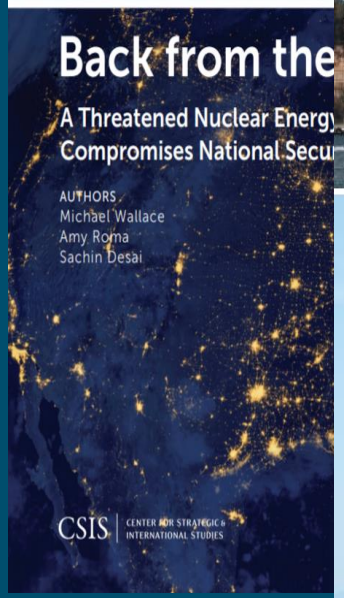
Decommissioning services

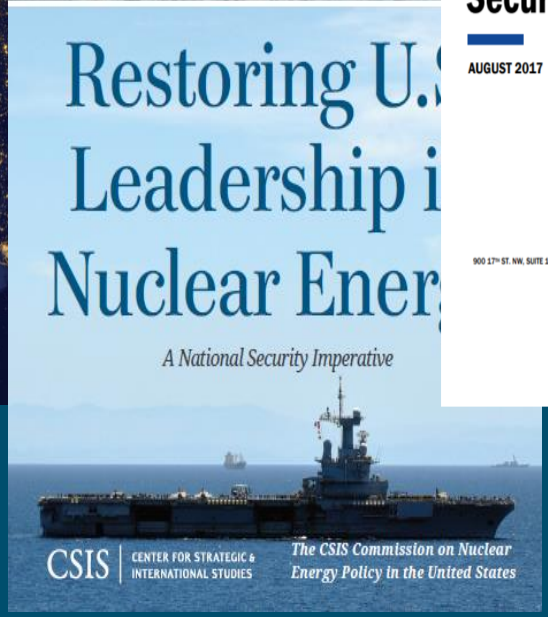
Decontamination technologies

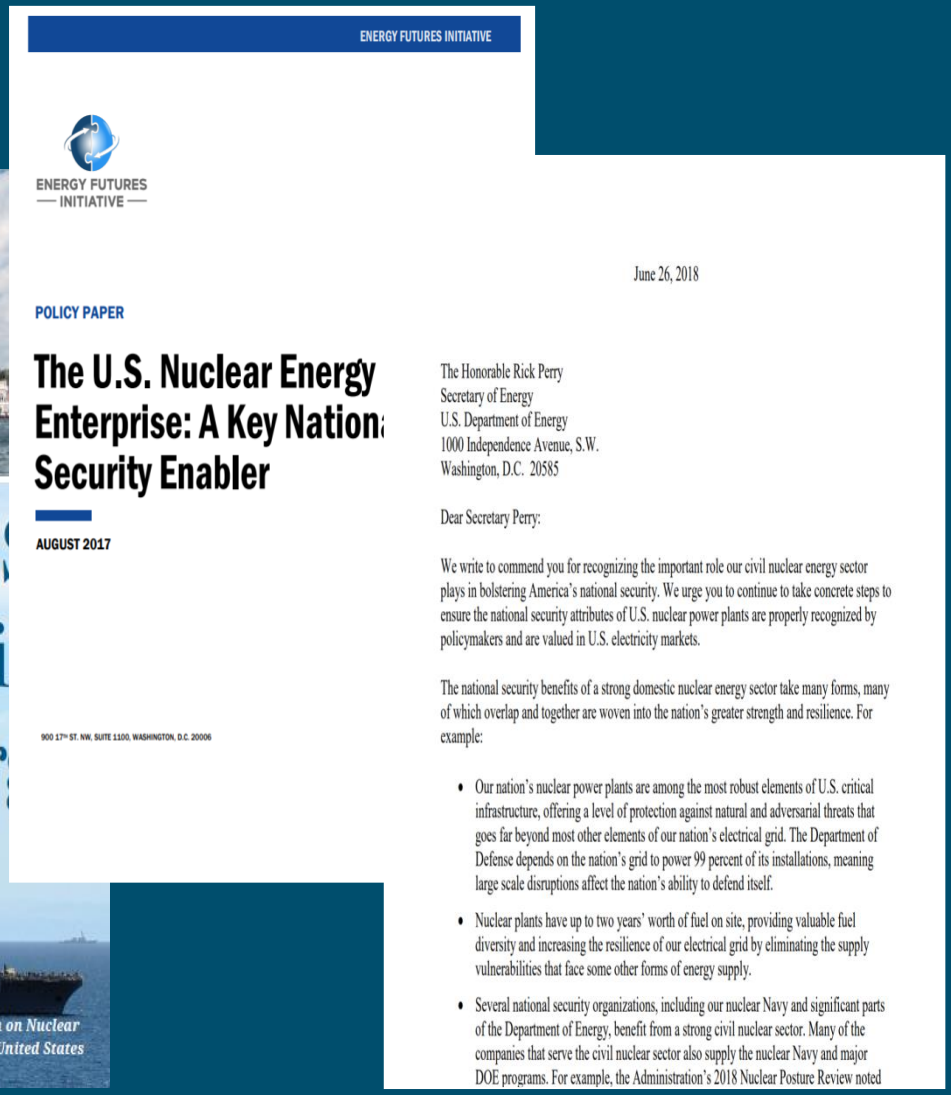
Nuclear waste management

Environmental protection

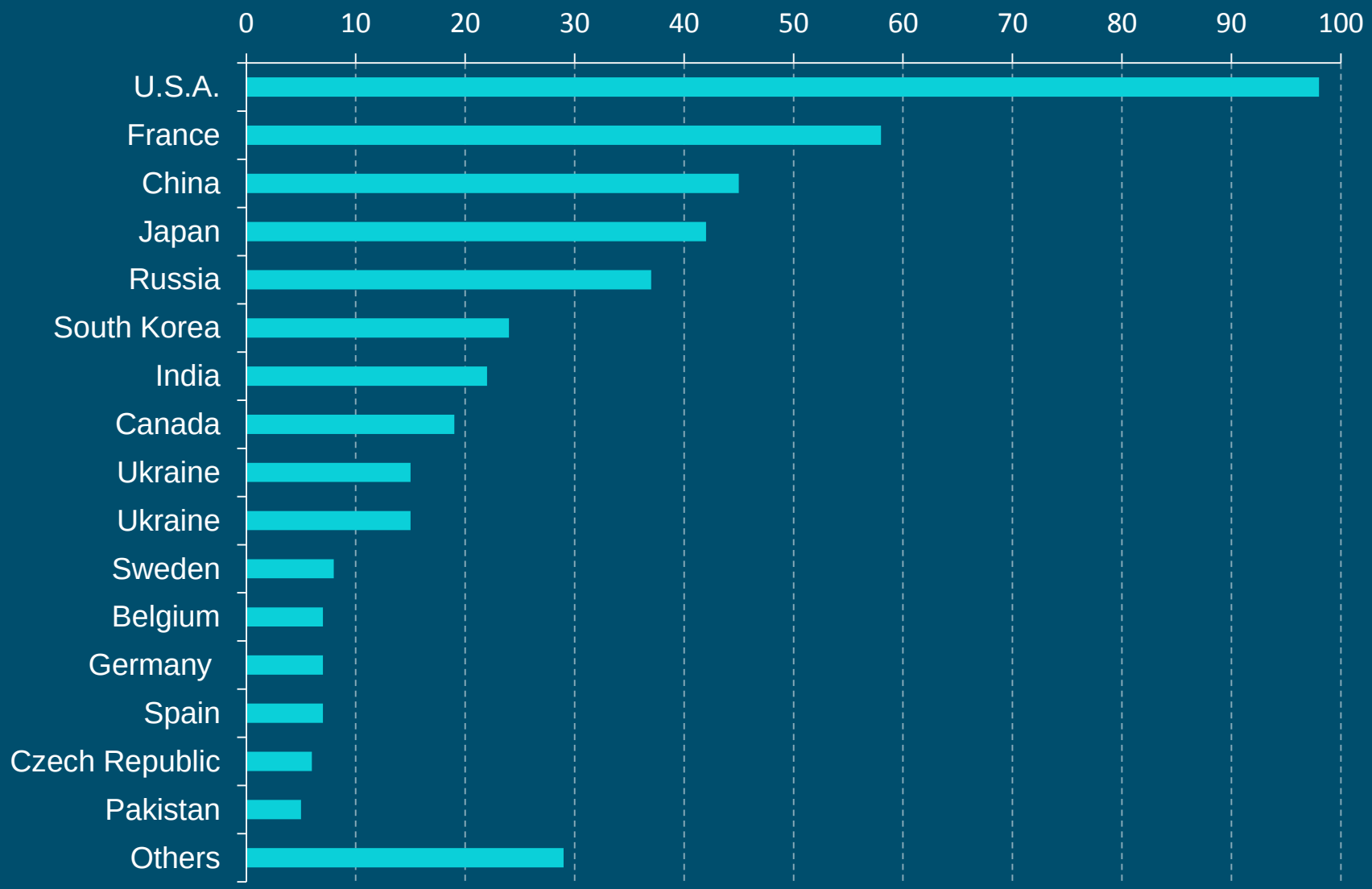
THE NATIONAL SECURITY IMPERATIVE





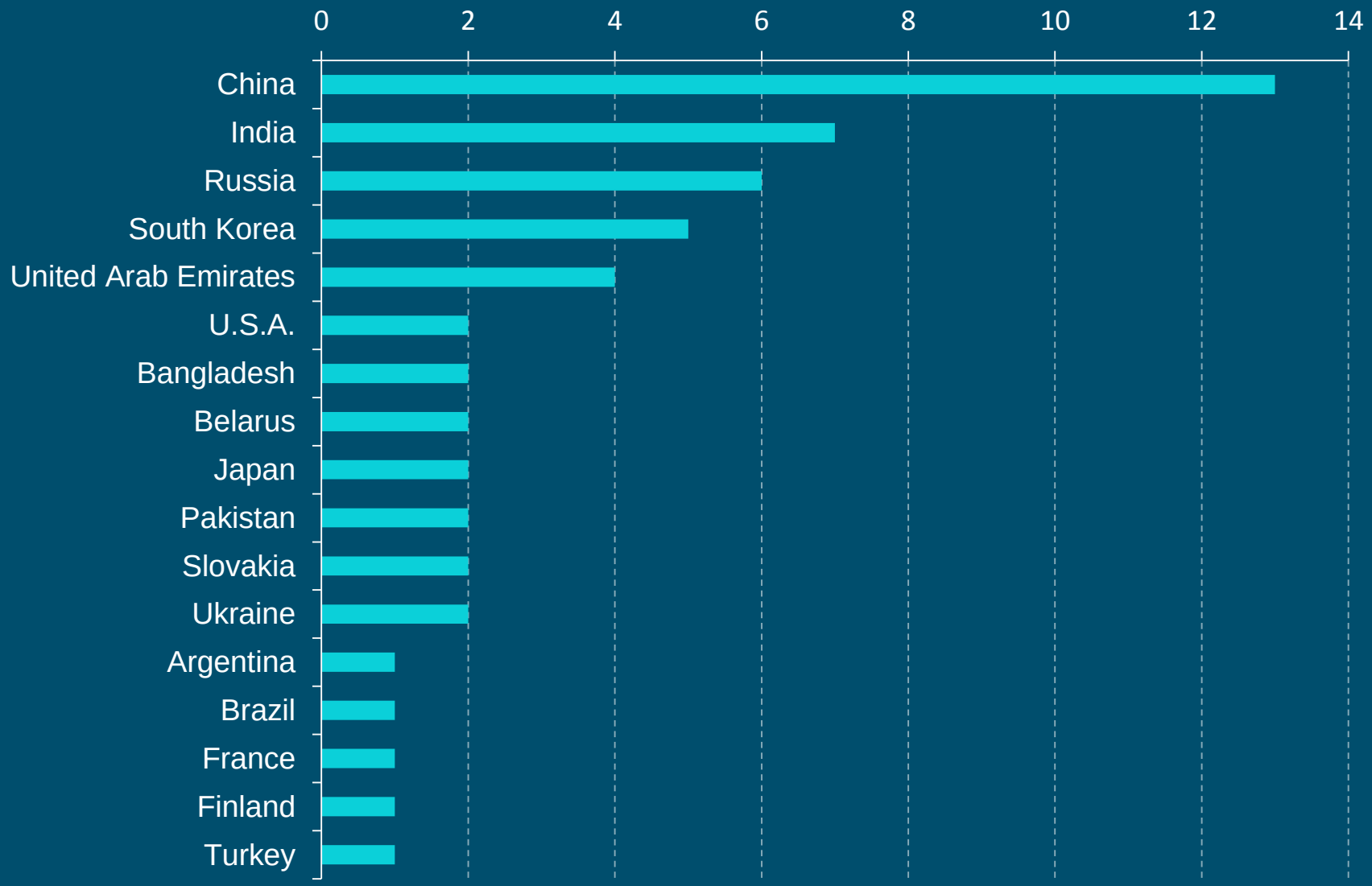


THE U.S. LEADS IN NUCLEAR POWER TODAY, BUT…



Source: International Atomic Energy Agency: PRIS Database
Updated: October 2018

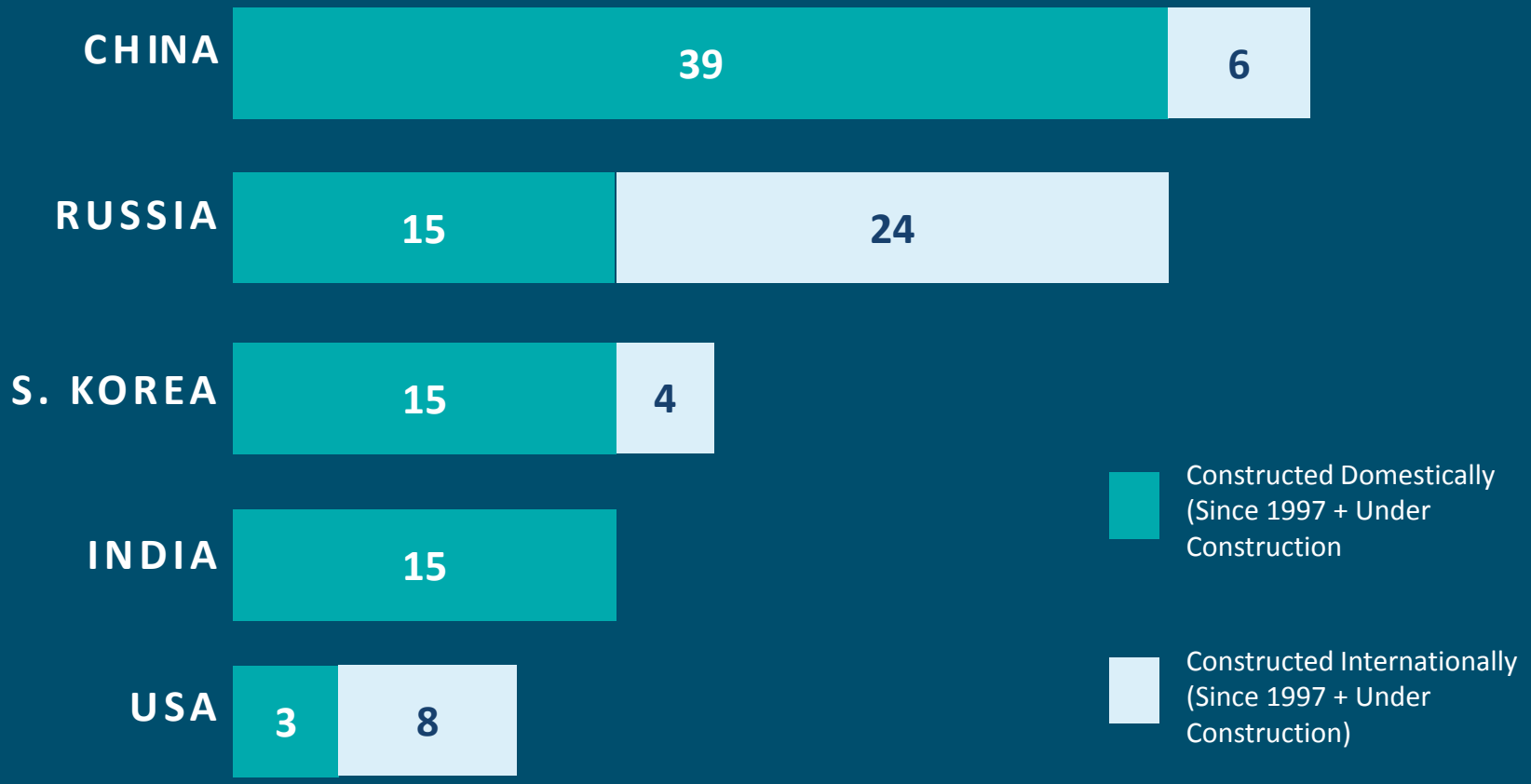
U.S. IS FALLING WAY BEHIND IN BUILDING NEW REACTORS



Source: International Atomic Energy Agency: PRIS Database
Updated: September 2018

RUSSIA AND CHINA ARE WINNING

China and Russia are leading in constructing their domestic designs

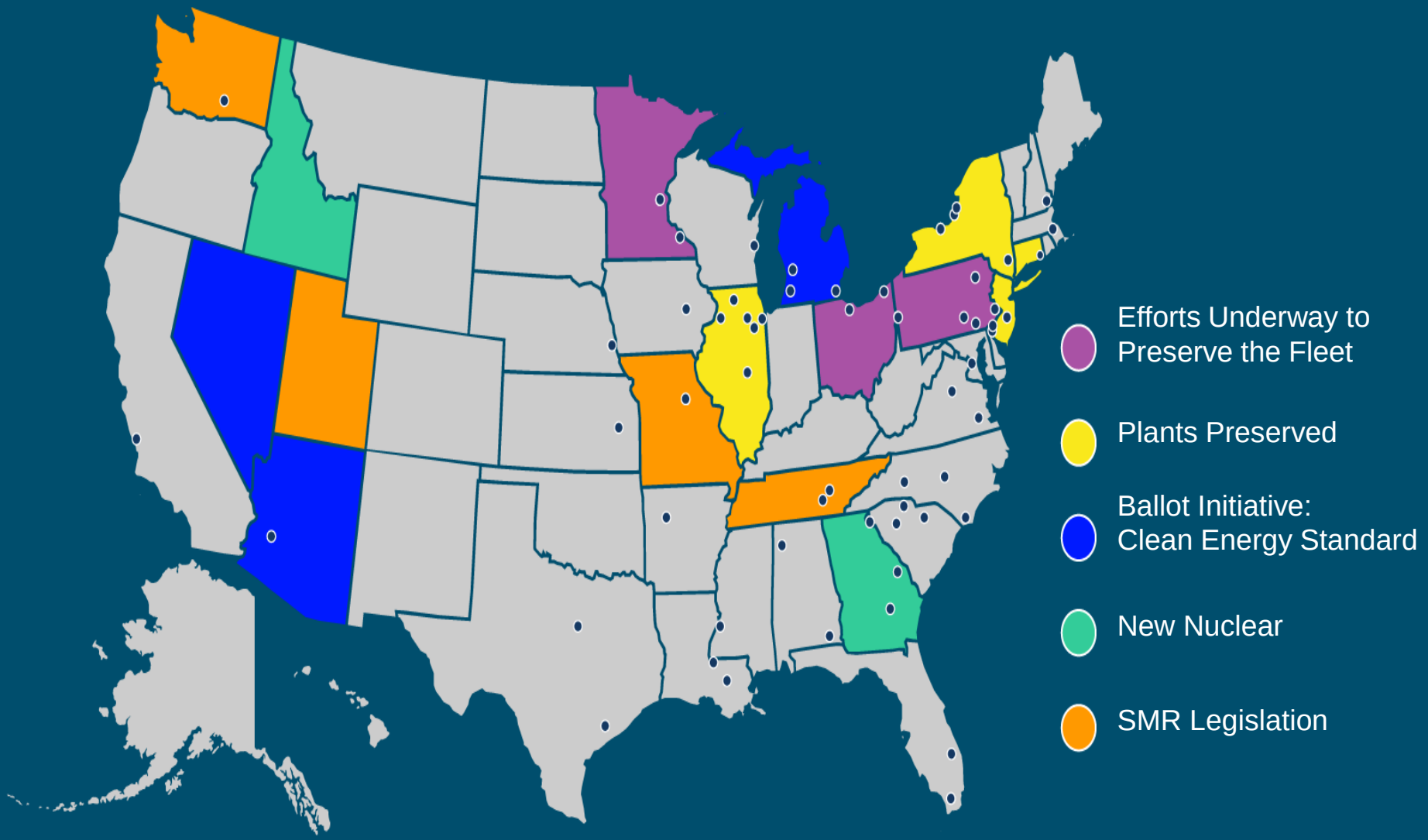


Source: International Atomic Energy Agency: PRIS Database
Updated: September 2018

FEDERAL ACTION

- Supportive Authorizing Legislation
  - NEIMA & NEICA - passed
  - NELA – introduced
- Appropriations
  - R&D
  - Research infrastructure
  - HALEU
- NRC reform
- DOE Grid Study
- Federal export advocacy

STATE OF THE STATES



Ohio Clean Energy Jobs Alliance

Prevent The Loss of $500 Million to Ohio's Economy

Here's how you can help:

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NUCLEAR POWERS PENNSYLVANIA
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Pennsylvania's nuclear energy industry is a vital asset that provides millions of households and businesses with safe, reliable, carbon-free electricity
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Nuclear

Nuclear power is the largest source of clean energy in the United States. In 2014, nuclear plants made 19% of all the electricity made in America. That's 4 times as much clean power as wind and solar combined.

Download Policy Overview

NEI


mothers for nuclear
mothers for nuclear
"As mothers, we feel a responsibility to protect our children, and the planet they'll inherit."
I am Kristin Zaitz
I am a co-founder of Mothers for Nuclear and mom to Oliver and
I am Heather Matteson
I am a co-founder of Mothers for Nuclear, and Zoe's mom. I am a


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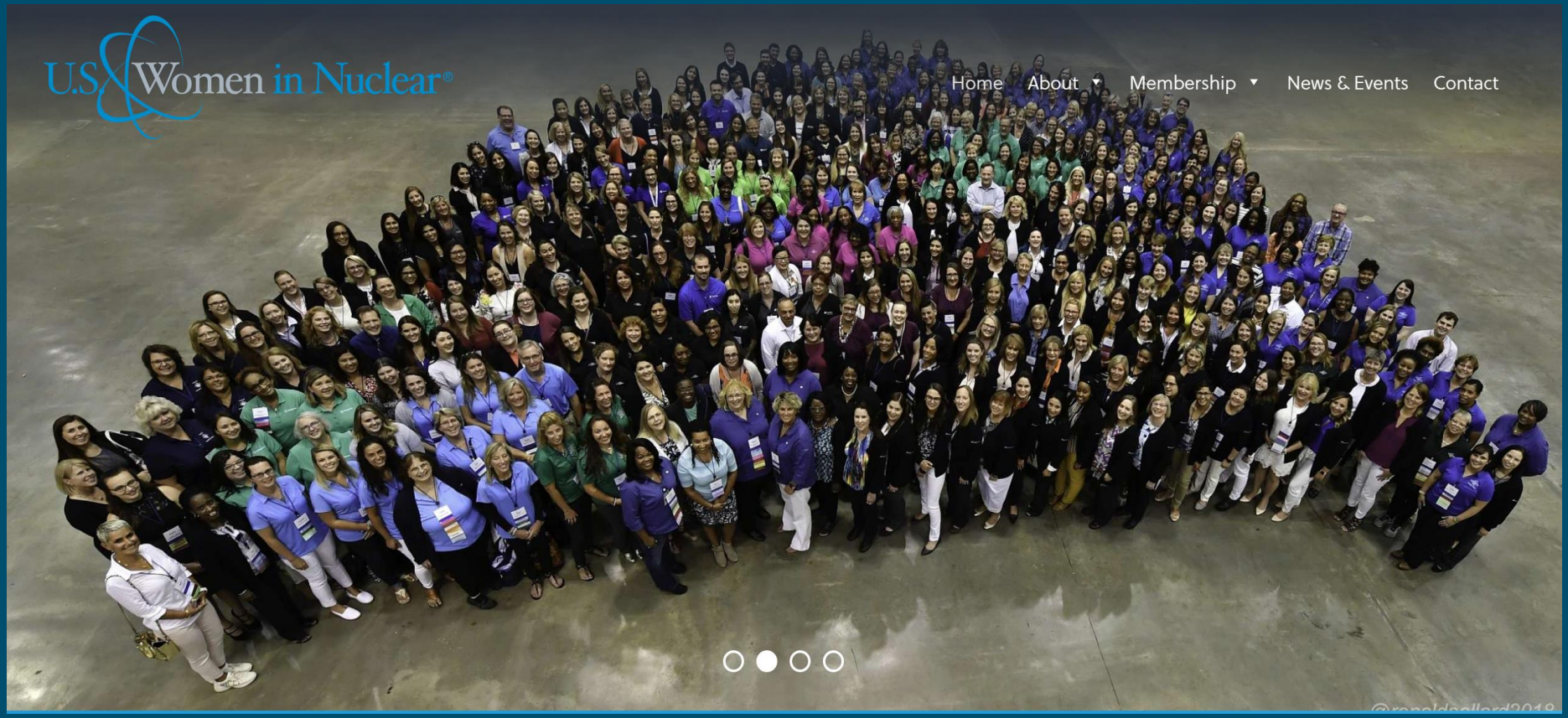
Our Mission
NAYGN provides opportunities for a young generation of nuclear enthusiasts to develop leadership and professional skills, create life-long connections, engage and inform the public, and inspire today's nuclear technology professionals to meet the challenges of the 21st century.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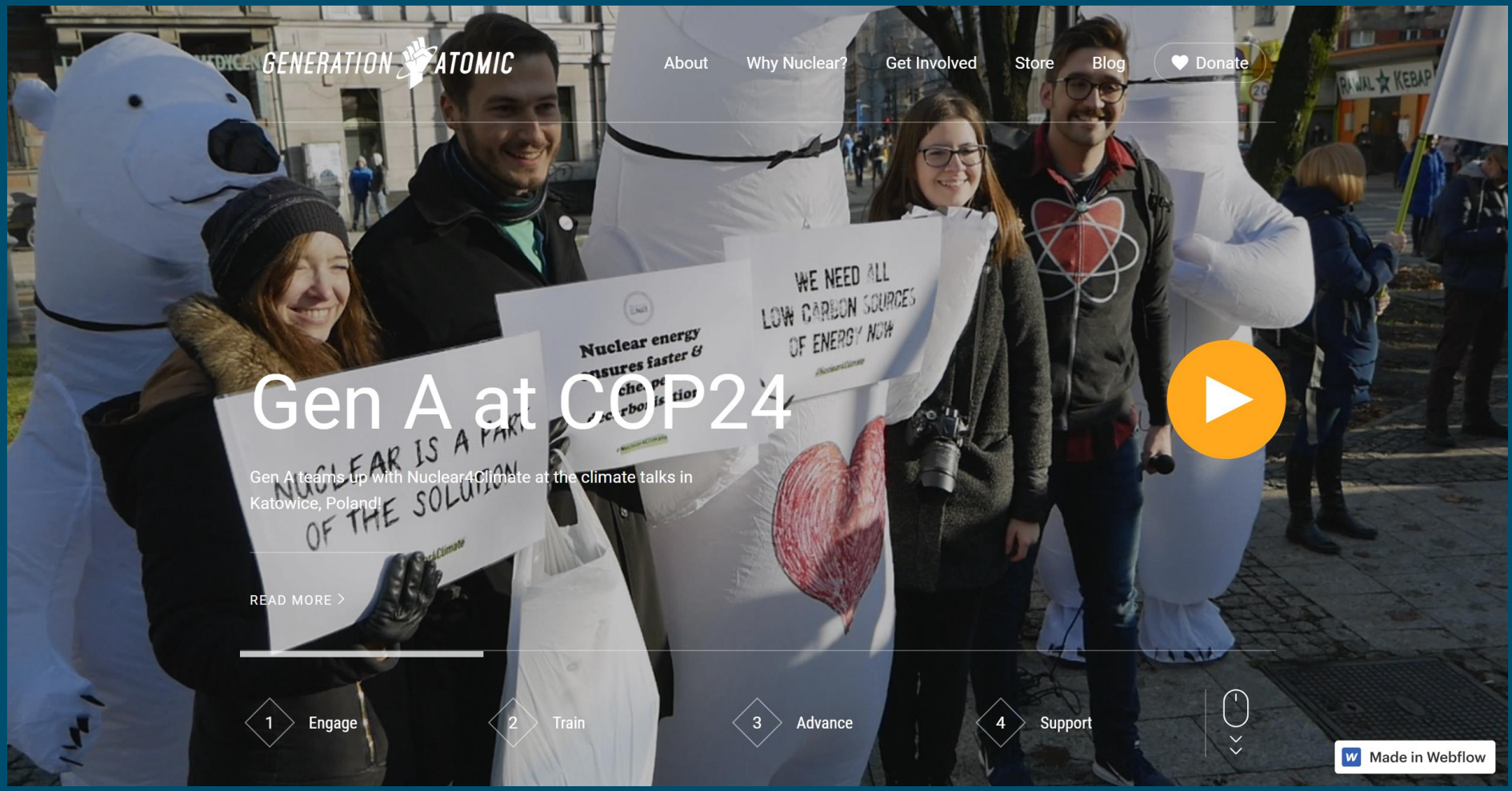
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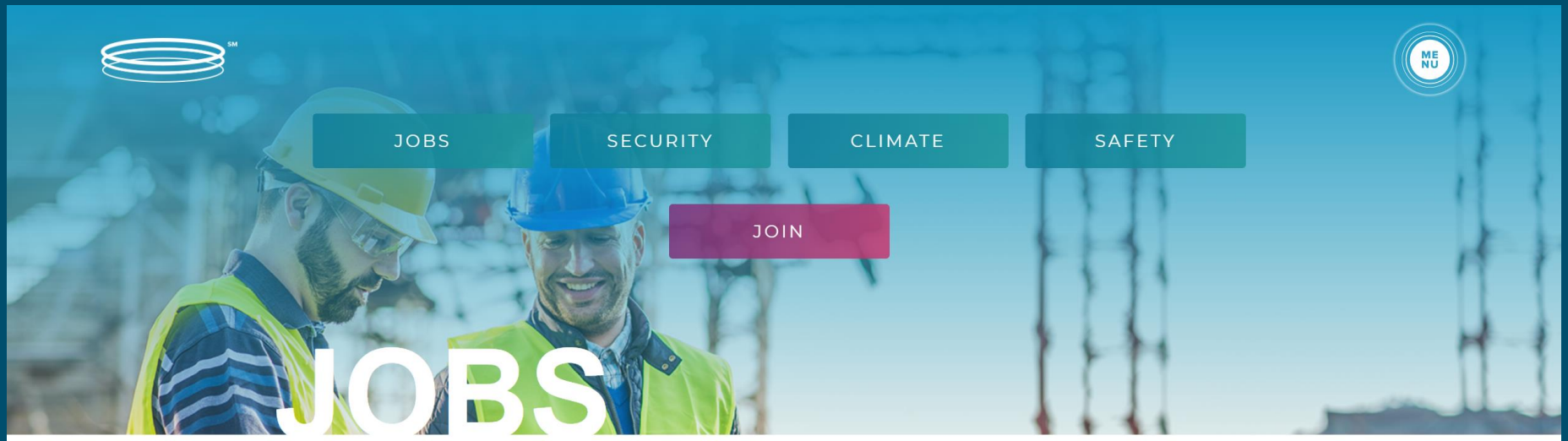

Nuclear plants are important economic engines for both our country and in the communities where they operate. They provide hundreds of thousands of

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