



# Forward Looking Statement

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This presentation contains forward-looking statements. Such forward-looking statements include those about American Superconductor Corporation's ("we," "us," "our," "AMSC" or the "Company") strategy, future plans and prospects, including statements regarding diversifying revenue, the Navy's plan to electrify the fleet, business drivers, industry trends and technological developments, potential impact of the novel coronavirus (COVID-19) pandemic on our business, expected strong backlog of orders entering fiscal 2020 for delivery in fiscal 2020, expected orders by Inox and Doosan, anticipated benefits of and markets for our products and services, project pipelines and proposed projects, business opportunities for major cities, and other statements containing the words "believes," "anticipates," "plans," "expects," "will" and similar expressions, although not all forward-looking statements contain these identifying words. Each forward-looking statement is subject to risks and uncertainties that could cause actual results to differ materially from those expressed or implied in such statement. Such risks and uncertainties include: we cannot predict if and when ComEd will begin the proposed second REG project; the COVID-19 pandemic could adversely impact our business; dependence on our largest customer, Inox, for a significant portion of our revenues and we cannot predict if and how successful Inox will be in executing on Solar Energy Corporation of India orders under the new central and state auction regime, and any failure by Inox to succeed under this regime, or any delay in Inox's ability to deliver its wind turbines, could result in fewer electrical control system shipments to Inox; our history of operating losses and negative operating cash flows, which may continue in the future and require additional financing; our operating results may fluctuate significantly and fall below expectations; we may be required to issue performance bonds or provide letters of credit; risks related to changes in exchange rates; failure to maintain proper and effective internal control over financial reporting could impair our ability to produce accurate and timely financial statements and may lead investors and other users to lose confidence in our financial data; our financial condition may have an adverse effect on our customer and supplier relationships; government contracts being subject to audit, modification or termination; reduction in revenue due to lack of congressional funding; dependence in wind energy market on the manufacturers that license our designs; dependence on attracting and retaining qualified personnel; difficulties re-establishing our HTS wire production capability in our Ayer, Massachusetts facility; not realizing expected sales; failure or security breach of our information technology infrastructure; failure to comply with evolving data privacy and data protection laws and regulations or to otherwise protect personal data; reliance on third-party manufacturers, suppliers, subcontractors and collaborators; failure to successfully implement our business strategy; problems with product quality or performance; risks from customers outside the U.S that may be either directly or indirectly related to governmental entities and risks associated with anti-bribery laws; limited success marketing and selling our superconductor products and system-level solutions; failure to realize benefits of acquisitions; dependence on the success of the commercial adoption of the REG system, which is currently limited; dependence of the growth of the wind energy market on government subsidies, economic incentives and legislative programs; our reliance on sales in emerging markets; changes in India's political, social, regulatory and economic environment may affect our financial performance; the intense competition our products face; risks related to operations in foreign countries; lower prices for other fuel sources may reduce the demand for wind energy development, which could have a material adverse effect on our ability to grow our Wind business; adverse changes in domestic and global economic conditions could adversely affect our operating results; risks related to our intellectual property; risks related to our technologies; risks relating to our legal proceedings; risks related to our common stock; and the important factors identified under the caption "Risk Factors" in our Form 10-K for the fiscal year ended March 31, 2019, and our other reports filed with the U.S. Securities and Exchange Commission. We do not undertake, and specifically disclaim, any obligation to update any forward-looking statements contained in this presentation.

# SuperGrid

Orchestrating the Rhythm and Harmony of Power

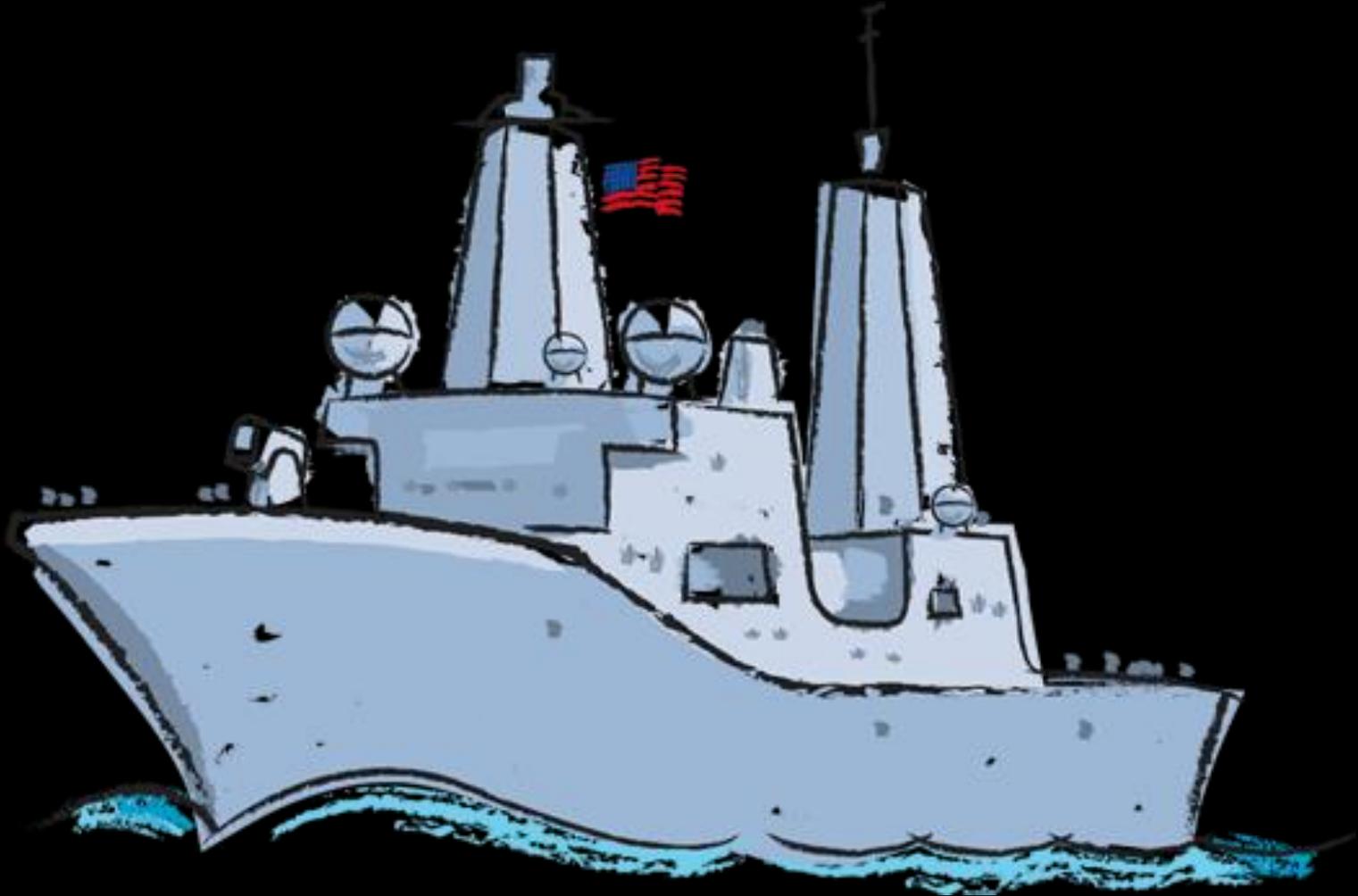
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# SuperShip

Protecting and Expanding the Capability of Fleets

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# AMSC Corporate Facts

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Headquartered in the U.S. with operations in eight countries

Founded in 1987

Proven clean tech leader, industry enabler and job creator

**Resilient solutions** from power generation to transmission and distribution

**Proprietary products** based on core technologies: smart software/controls and smart materials

## What we do

### Our Vision

to power the world with smarter, cleaner  
**... better energy**



### Our Mission

**we** listen partner innovate  
to make smarter, cleaner energy profitable



## Who we are



**Constantly Collaborating**



**Always Accountable**



**Best and Brightest**



**Listen and Learn**



**Inherently Innovative**

# COVID -19 Response Plan

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## Goals:

- **People:** Take proactive measures to safeguard our employee and their families, our suppliers, our customers, and the communities in which we live and work
- **Products:** Minimize any disruption to our businesses, sustain commercial activity as much as possible, and keep our employees, customers, and suppliers informed

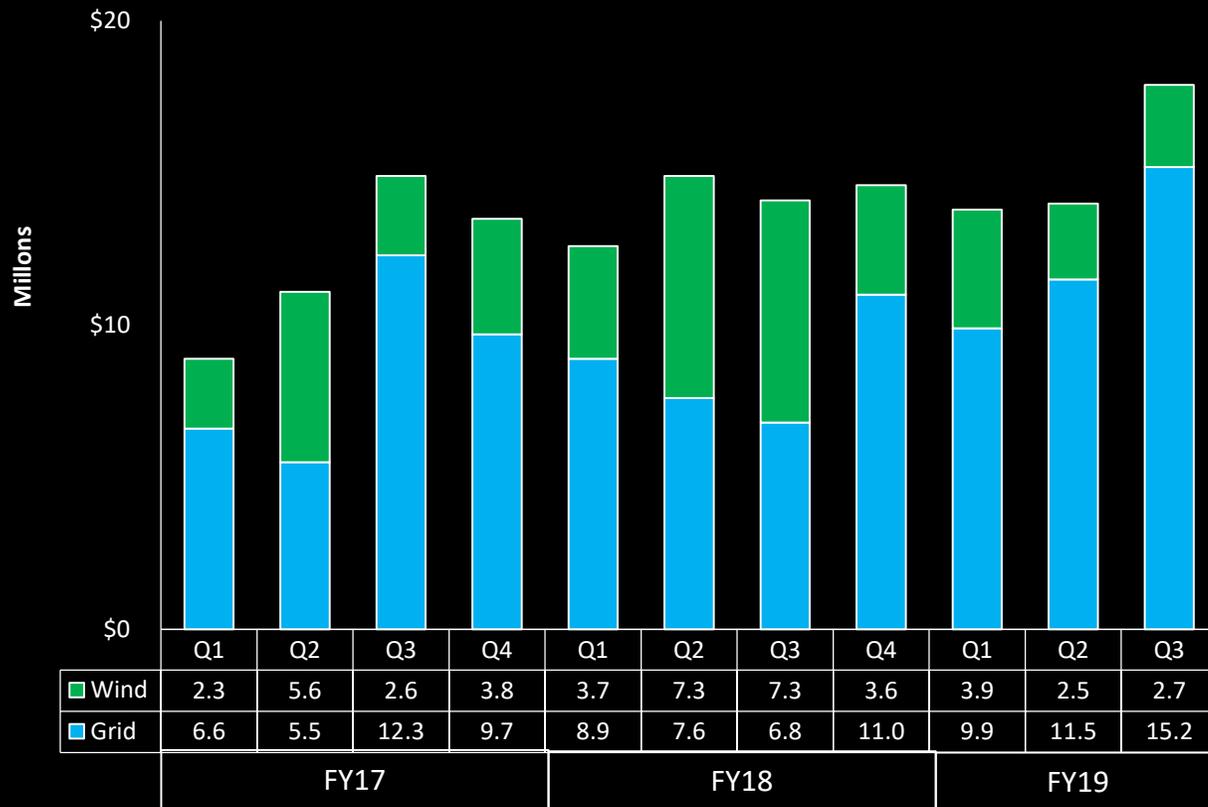
## Actions:

- **AMSC is deemed to be an essential business** for all manufacturing locations
- At manufacturing sites, physical separation protocols are in place. Rigorous cleaning schedule maintained
- Implementing deeper remote support tools to support product installations
- Protecting raw materials supply and increasing supply chain flexibility
- Adhering to CDC and local regulations, including working from home, social distancing at office locations, unnecessary local and international business travel suspended

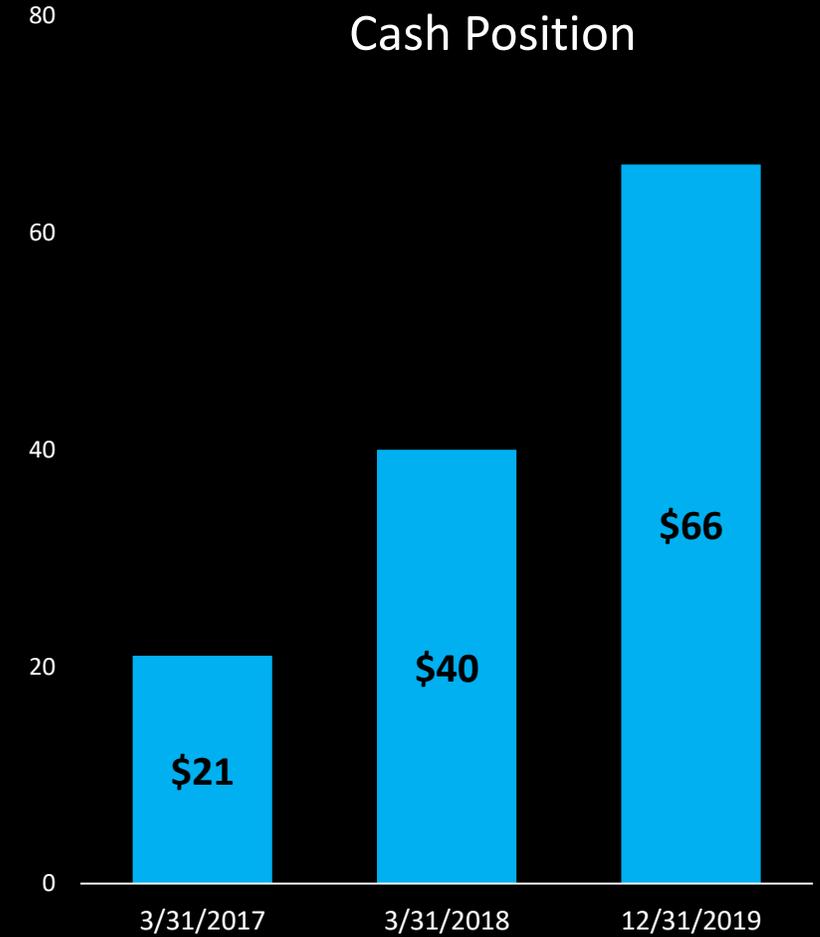
# Improved Financial Performance

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## Revenue



## Cash Position



# Business Drivers to 2025

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## Grid Evolution

*Power failures:* cost between \$18 and \$33 billion per year.

*External threats:* cyber, physical and accidental.

*New technologies:* over 1 million electric vehicles on U.S. roads.

*Changing electricity mix:* proliferation of renewables and distributed generation.

*Urbanization:* 82% of the U.S. population lives in urban areas.

## Rising Global Threats and Sustainable Security

Near-peer military modernization, nuclear armament and foreign engagement propels the U.S. Navy to move towards all electric power and weapon systems.

We are living in a world where threats are increasing.

## Climate Change and Global Environmental Sustainability

“At 1°C above pre-industrial temperatures, we are seeing fires—even in the Arctic—record floods, superstorms, heatwaves and cold snaps.”\*

Paris Agreement member countries (185) have submitted measures to limit or reduce their greenhouse gas emissions by 2025 or 2030.



# The Grid is Evolving



Classical



Digital

2025

> 50 %



100 GW → 155 GW

Global Data Intelligence Report 2019

> 200 %



69 GW → 160 GW

SEIA

> 600 %



Over 6 million EV's

Edison Electric Institute

# D-VAR Market Drivers

In the third quarter of fiscal year 2019, we announced \$31 million of new D-VAR orders and expect to enter fiscal 2020 with a strong backlog of orders for delivery in fiscal 2020.

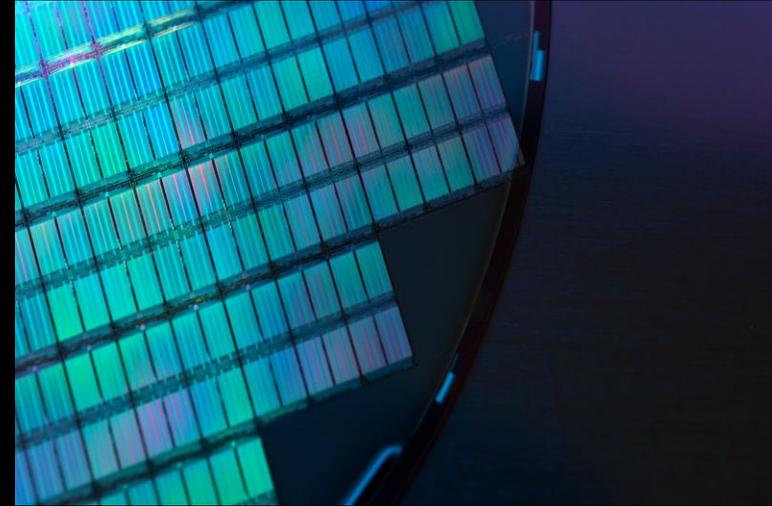
## Cleaner



### Enabling wind farms to comply with local grid codes

- Wind farm owners have two knobs
- Produce real power or VARS
- Have an economic incentive to create real power
- Grid codes continue to get more stringent

## Smarter



### Semiconductor fabs and other industrial processes

- Data centric era requires cutting edge DRAM memory technology
- Big data, wireless coms, consumer electronics, auto infotainment, industrial electronics, gaming
- Power losses equate to impacts to bottom line

D-VAR  $\sim 1/3^{\text{rd}}$  the cost of traditional recondutoring or cogeneration

# VVO Market Drivers

## Grid Evolution

*New technologies:* over 1 million electric vehicles on U.S. roads.

*Changing electricity mix:* proliferation of renewables and distributed generation.

Conventional generation is retiring, and distributed generation is increasing.

Consumers are impacting the direction of power flow.

Distributed Generation adoption rate outpaces utility ability to manage change.

**Problem :** Voltage spikes/sags due to intermittent DG

VVO allows utilities to own the voltage



**Solution:** VVO system  $\sim 1/8^{\text{th}}$  the cost of reconductoring

**Problem :** No capability to add additional solar capacity



# Resilient Electric Grid Market Drivers

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Resilience, reliability and load growth capacity challenges due to space constraints, siting challenges and concerns over environmental impact.

## Achilles Heel

Only a few critical electrical substations keep the power flowing in one of the most densely populated U.S. cities.

## Climate and Natural Events

REG provides grid resiliency in the event of earthquake or equipment failure while minimizing project cost and disruption.

## Resiliency of Key Neighborhoods

REG provides substantial improvement the grid as this city works to modernize one of the oldest power systems in the U.S.

## Nowhere to Go

REG can triple to quadruple the reliability that is not feasible with traditional equipment in this dense city.

## Vertical and Green

REG provides environmentally friendly options for increasing load growth without disrupting this city's vertical growth.



## REG

Modernizes the grid

Interconnects substations

Maximizes existing utility assets

Allows instantaneous power outage recovery

Utilizes AMSC's "smart materials" technology

Makes permitting of major projects much quicker and easier

# Chicago, IL – Project #1 Expected Live in 2021

## Project #1 (Contracted)

Incorporates all the features critical to large-scale REG projects.

**Doubles current substation reliability.**

Provides high-capacity link between substation assets.

**Experience and lessons learned to benefit Project #2.**

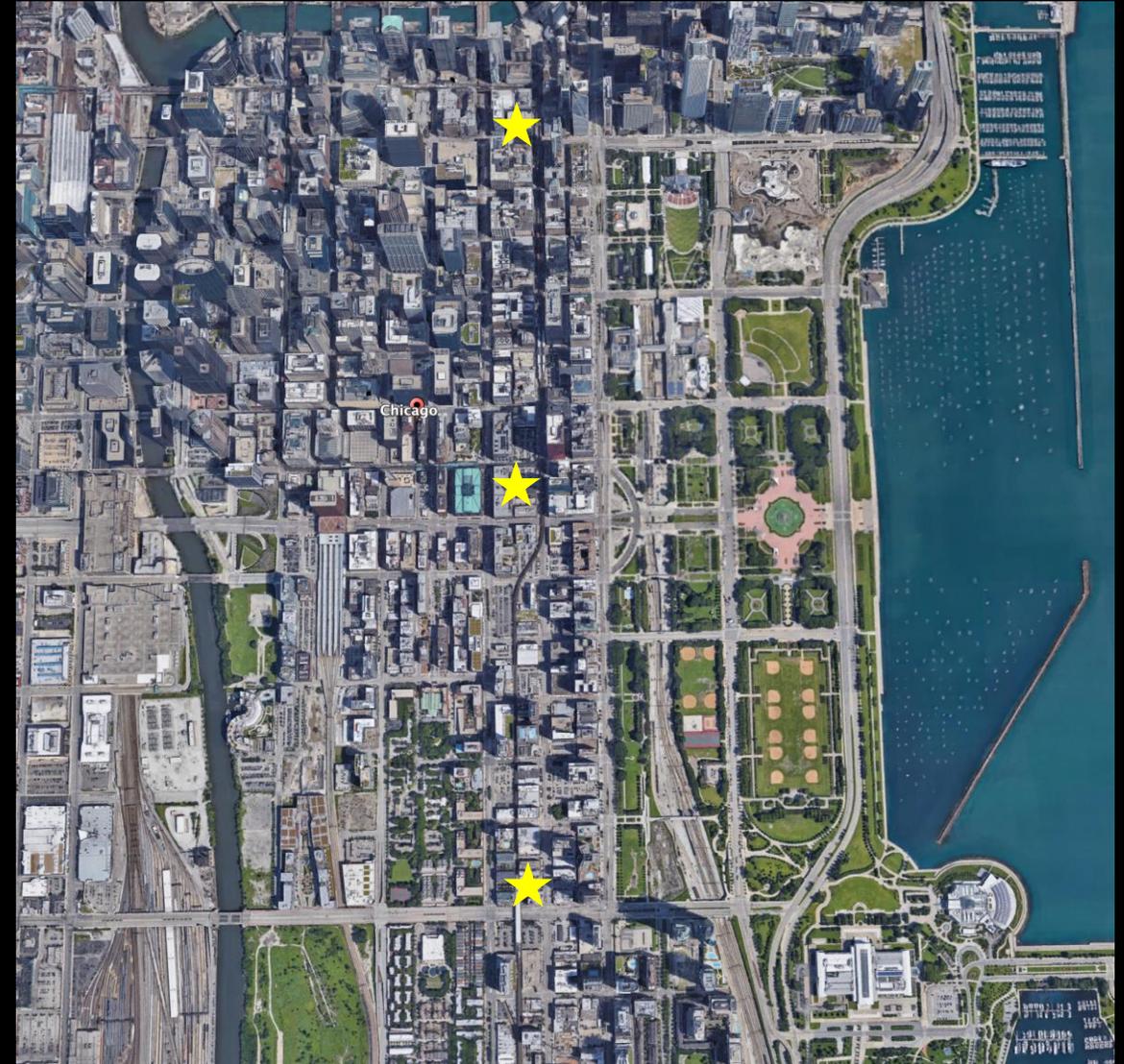
## Project #2 (Proposed)

**Three substations networked together**, triples current reliability and resiliency for all substations.

Far **less disruptive** to downtown area than conventional transmission upgrades.

**Will not** require additional high-voltage transformation.

**Will not** require land acquisition for substation expansion.

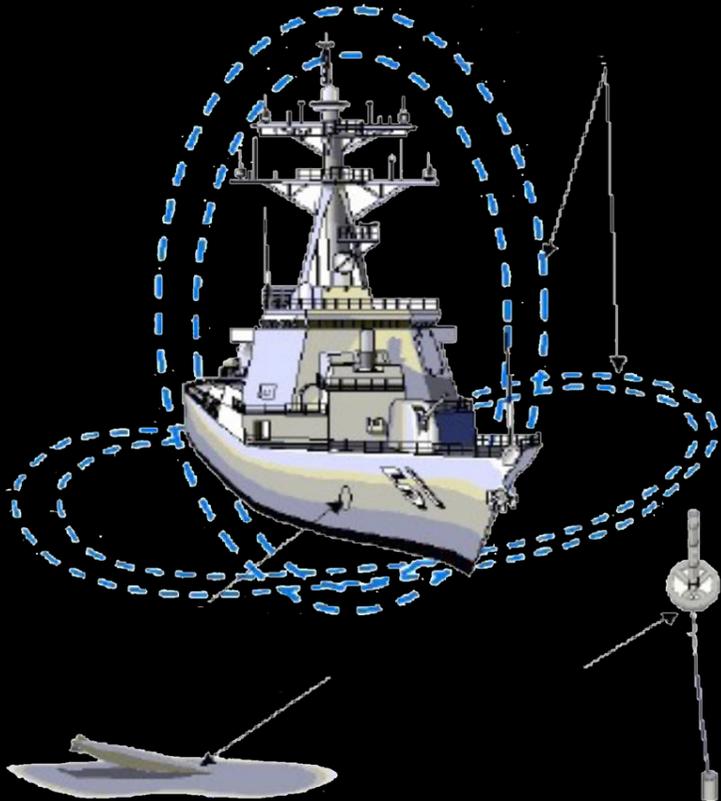


# Ship Protection Systems: Why AMSC?

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**Current system:** ships' magnetic signature masked by substantial amounts of copper cable-coils, taking up valuable space, weight and power.

**AMSC solution:** ships' magnetic signature masked by our Ship Protection Systems (SPS) stealth solution; much smaller, lighter and higher performing HTS cable coils eliminating 50-80% of the system weight and saving 40-50% of the system power.



HTS Degaussing  
Cable used in SPS

Copper  
Degaussing  
Cables



# San Antonio Class

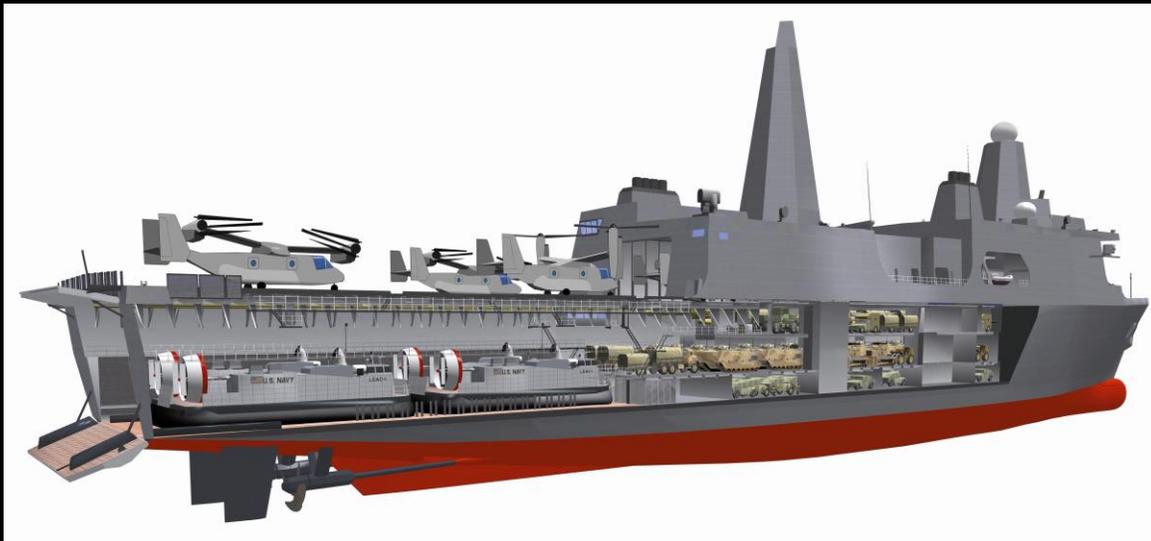
AMSC's SPS has been chosen as the baseline design for the San Antonio Class Platform

## LPD Revenue Annuity

2 Flight I LPDs  
13 Flight II LPDs  
~\$10 Million per vessel  
Potential \$150 million revenue stream

## Ship Impact

60 Tons removed  
50% Energy savings  
Lower installation cost  
Lower life cycle cost



25,000 Tons, 22 knots, 360 sailors/800 marines

# Wind Business Drivers to 2025

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## The Climate Revolution

Climate activists are raising awareness for urgent action on carbon reduction driving demand for clean sources of energy.

## Onshore Wind Power Demand in Developing Countries

Increasing adoption of wind power in developing countries enhances energy security, provides local jobs and reduces carbon emissions.

## Global Offshore Wind Power Demand

Offshore wind turbines are more efficient than their onshore counterparts because wind speed and direction over the water are more consistent. Offshore wind does not interfere with land use such as agriculture, construction and recreation.



# India

## Onshore Wind Power

**3<sup>rd</sup>** Fastest growing economy in 2018

**3<sup>rd</sup>** Largest carbon emitting country since 2016

2017 Policy change

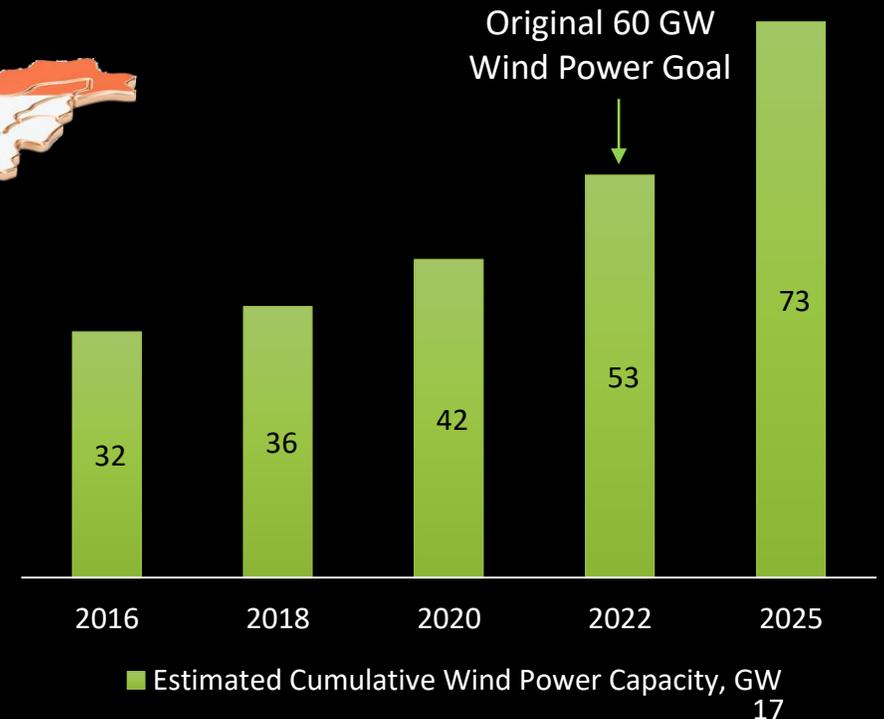
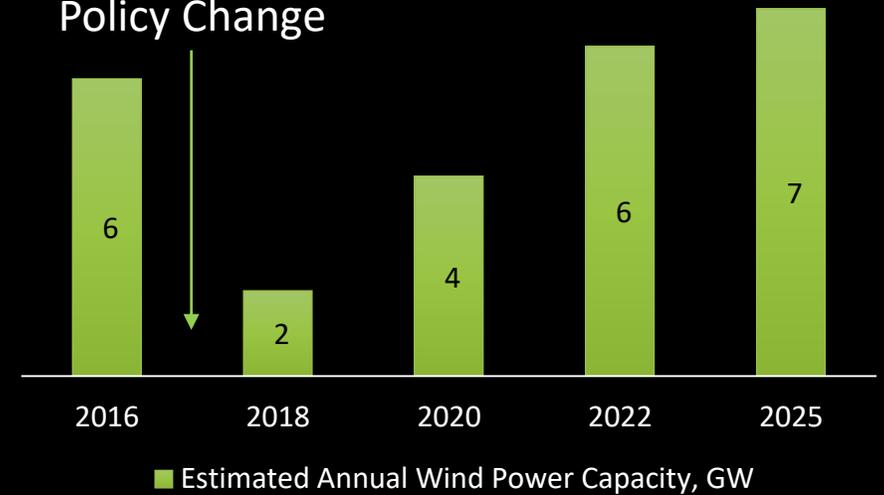
SECI 1-8 **~10 GW** of wind power auctioned

## Paris Agreement

India is world player engaged in massive push to reduce dependency on fossil fuels and focus on renewable energy.



## Policy Change



# South Korea

## Offshore Wind Power

8<sup>th</sup> Biggest global energy consumer

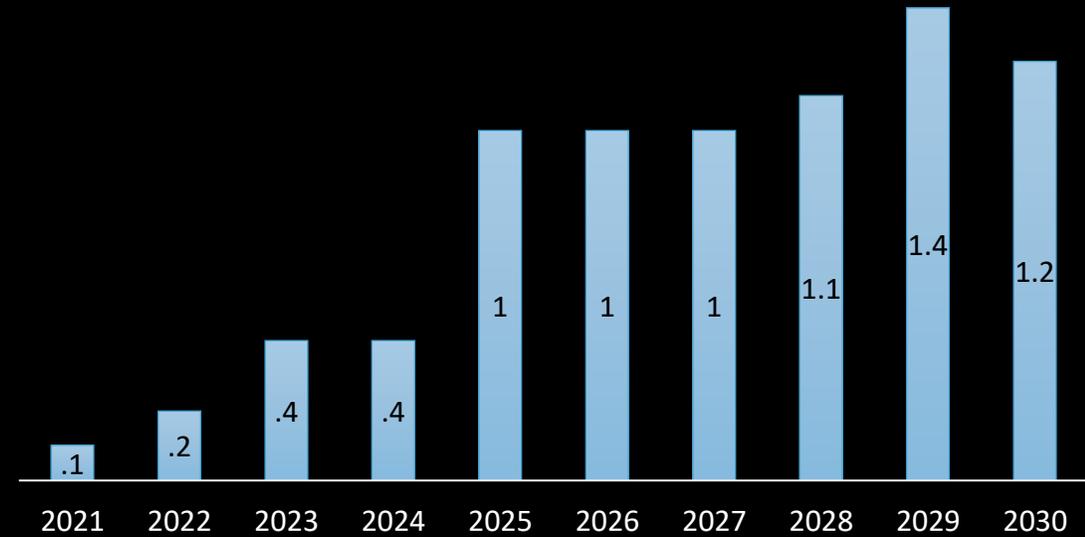
Imports ~98% of its energy supply

7<sup>th</sup> Biggest global carbon dioxide emitter since 2016

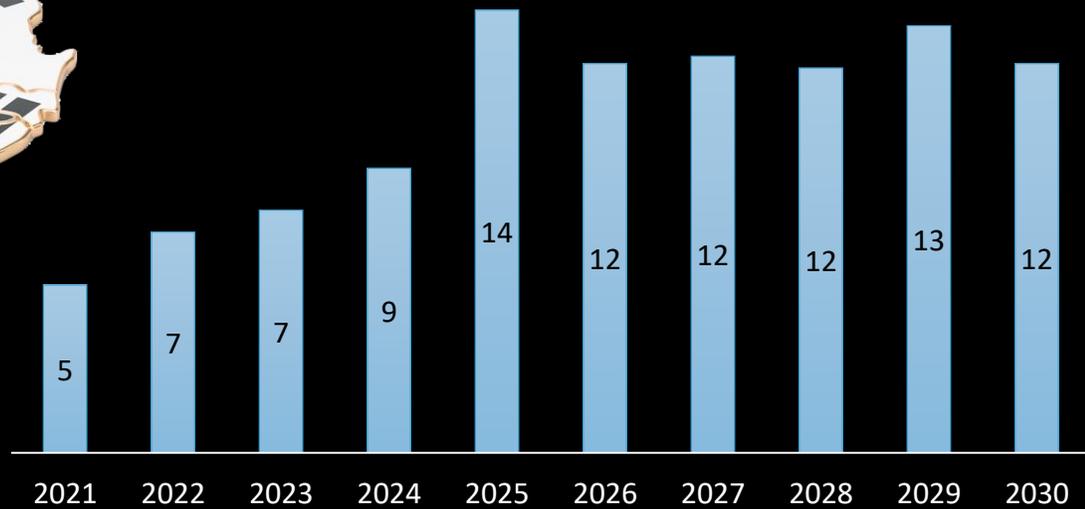
Renewable Target of 20% by 2030

## South Korea

Represents entry point for AMSC's global offshore wind market.



■ S. Korea Estimated Annual Installed Capacity, GW



■ Global Offshore Estimated Annual Installed Capacity, GW

# Unique Solutions

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Onshore and offshore wind turbine technology.  
Mechanical, electrical design and software development.  
Product portfolio from 2 to 10+ MW wind turbine designs.

## ECS Represents 5% - 10% of the Turbine

**Electrical Pitch System Power output**



**Nacelle Cabinet Power distribution and turbine control**



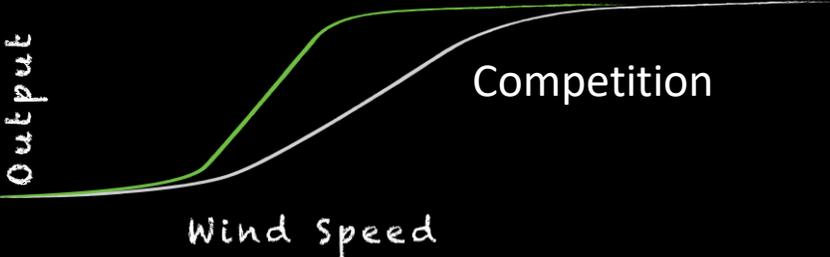
**Tower Base Cabinet Turbine control**



**Converter Cabinet for connection to any grid frequency**



## AMSC Partner Turbine



**INOX WIND**

**DOOSAN**

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