

Superconductor Technologies Inc.

NASDAQ CM: SCON

Monday, September 12, 2011



Safe Harbor Provisions

Before we begin the presentation, let me remind everyone that today's comments regarding management's beliefs, expectations and plans for the future are forward-looking statements made in reliance upon the safe harbor provisions of the Private Securities Litigation Reform Act of 1995.

Forward-looking statements are not guarantees of future performance and are subject to various risks, uncertainties and assumptions that are difficult to predict. Therefore, actual results may differ materially from those expressed in any forward-looking statements.

Forward-looking statements can be affected by many factors, including those described in the Risk Factors and MD&A Sections of our 2010 Annual Report on Form 10-K and our most recent Quarterly Report on Form 10-Q. These documents are available online at www.sec.gov.

Lastly, our forward-looking statements are based on information currently available to senior management, and company has not assumed any duty to update such statements.



Corporate Overview and History

STI is a world leader in the development and production of High Temperature Superconducting (HTS) materials and associated technologies



Discovery of High Temperature Superconducting (HTS)

Superconductor Technologies Inc. (STI) incorporated in Santa Barbara, California

HTS Thin Films for Electronics

Invents Reactive Co-evaporation – Cyclic Deposition and Reaction (RCE-CDR) HTS deposition technology

SuperLink® Product Released

High performance Radio Frequency (RF) infrastructure solution

HTS Manufacturing Ecosystem Created

Cost competitive HTS and cryogenics in full scale manufacturing production

2G HTS Wire for Emerging Power Applications

Developing HTS wire to capture new market opportunities

Market Validation

- **Demonstrated exceptional in-field critical current values in high magnetic field** for 2G HTS wire, meeting customer requirements for superconducting motor and generator applications.



"We are excited to verify these test results confirm that STI's HTS deposition process produces 2G HTS wire with state-of-the-art superconducting properties."

Dr. Ken Marken, Superconductivity Technology Center Leader at LANL

- **Gained important customer acceptance for our HTS wire samples** by meeting customer requirements necessary for superconducting 2G HTS wire applications for large rotating machines.

"STI and Los Alamos National Laboratory (LANL) Reactive Co-Evaporation (RCE) technology is both technologically innovative and potentially commercially enabling for new HTS machines," stated a potential 2G HTS wire customer for superconducting machines applications. "STI has shown superior current carrying performance at 65 Kelvin (K) and high magnetic fields, utilizing its newly developed HTS [wire] manufacturing processes. The progress LANL and STI have shown to date suggest even further improvements in the future."

- **Southwire completed testing of our wire samples for power cable** applications and confirmed that samples met the company's initial requirements for HTS AC power cable applications.



"Southwire draws on over a decade of superconducting cable experience and has already successfully installed multiple HTS cable projects for the Department of Energy and electric utilities. Southwire has identified several key applications where HTS technology can provide a significant benefit in the power delivery system. The availability of low-cost, high-performance HTS wire for integration into power cables and other power devices will greatly benefit commercial markets."

Axel Schlumberger, Senior Vice President, Energy Division, Southwire Company

Go to Market Strategy

- **Leverage STI's industry leading expertise in HTS materials and manufacturing to commercialize 2G HTS Wire**
- **Target hyper-growth emerging Smart Grid market**
 - Become a significant supplier to the HTS wire market with our industry leading technology
- **Focus on the customer for development initiatives**
 - Design wins for new emerging products
 - Supply agreements and wire sales to end device companies
- **Build a cost optimized manufacturing process that scales to meet demand**
 - "Copy Exactly" – Intel's manufacturing model
- **Continue to enhance our strong IP portfolio**
 - Protecting STI's unique capabilities



Leadership



Jeff Quiram

President & CEO
6 Years at STI
26 years in the industry

ADC Telecom,
US West



Bob Johnson

SVP, Operations
11 Years at STI
31 years in the industry

Schlumberger,
Harman Industries



Bill Buchanan

CFO
12 Years at STI
37 years in the industry

Applied Magnetics,
Raytheon Co.



Adam Shelton

VP, Product Management
& Marketing
5 Years at STI
23 years in the industry

Motorola,
AFC/Tellabs, Bell
Canada



Bob Hammond

SVP, CTO
24 Years at STI
41 years in the industry

Los Alamos National
Laboratory



Tom Giunta

VP, Engineering
3 Years at STI
27 years in the industry

Motorola, Ciena
Corporation

STI Today: Supplying Commercial HTS Products for Wireless Infrastructure

Over \$150M in HTS product sales to date with over 6,000 systems deployed with Verizon Wireless and AT&T



- First commercial HTS product released in 1998
- All product lines have field proven MTBF's of over 1 million hours
- 24/7 customer support, 99% ship to promise performance
- Leveraging our credibility as a supplier to the world's largest wireless carriers to enter the 2G HTS wire market

Current Product Lines



SuperLink[®]



AmpLink[™]

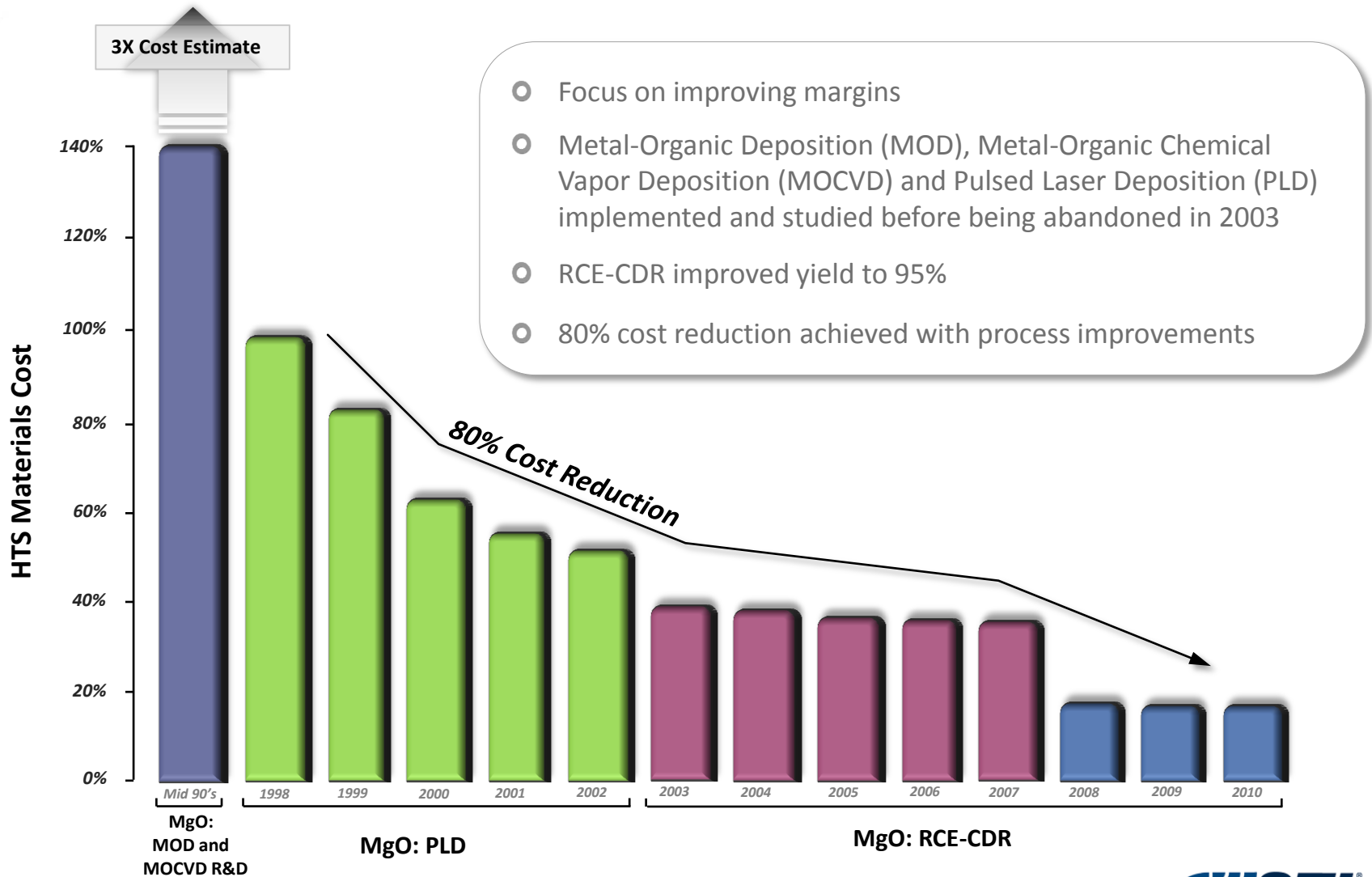


SuperPlex[®]



Sapphire Cryocooler

HTS Materials Cost Reduction Over Time



Our 2G HTS Wire is Engineered for Low Cost



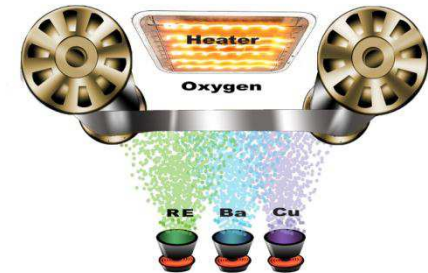
SDP

Solution Deposition Planarization (SDP)



IBAD/epi MgO

Ion Beam Assisted Deposition (IBAD)



RCE-CDR

*Reactive Coevaporation – Cyclic
Deposition and Reaction (RCE-CDR)*

STI's 2G HTS Wire Can Have a Clear Cost and Performance Advantage for the Following Reasons:

- Fewer deposition process steps – reduces runtime and increases yield
- Simple and repeatable template
- Low cost raw materials
 - Start with basic raw compounds vs. more expensive premixed, solution-based compounds
 - Inexpensive substrate material utilized
- High throughput and large HTS growth area
- Lower production equipment cap-ex than alternative manufacturing methods
- Less electricity and production floor space required per kilometer of wire produced

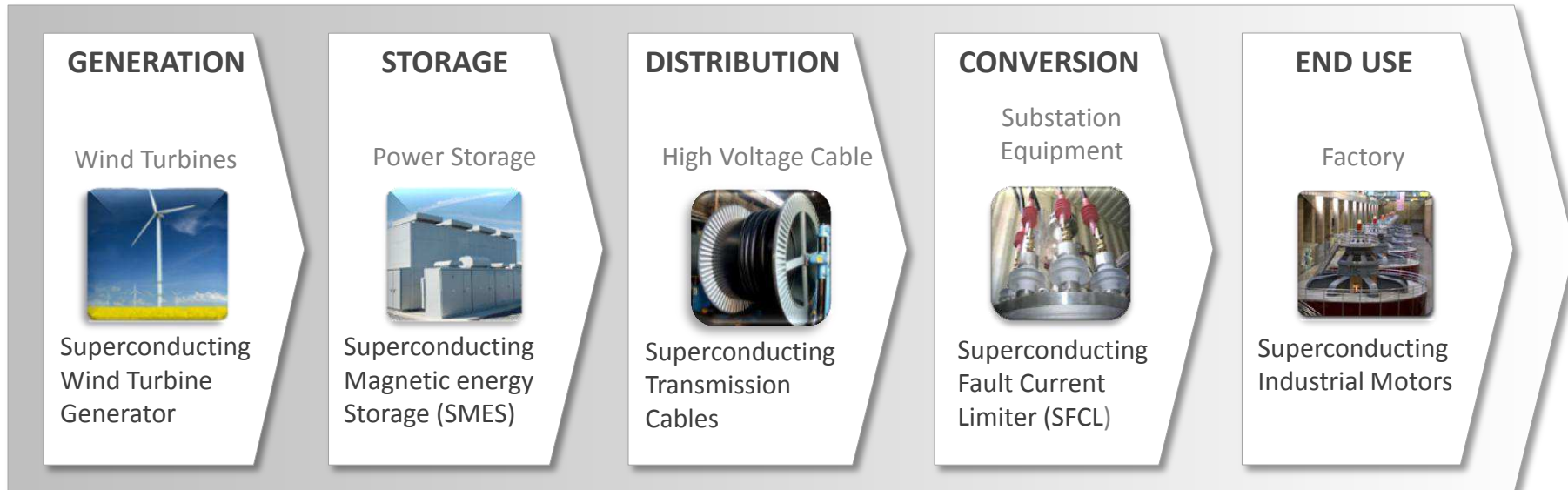
Current 2G HTS Wire Development Milestones

Milestone	Target Date
Customer technical acceptance of 2G HTS wire samples	Q1 2011 (completed)
SDP system operationally capable of producing 10 meter lengths	Q3 2011
RCE-CDR system operationally capable of producing 50 meter lengths	Q4 2011
IBAD system operationally capable of producing 1 kilometer lengths	Q1 2012
SDP system operationally capable of producing 1 kilometer lengths	Q2 2012
RCE-CDR system operationally capable of producing 100 meter lengths	Q2 2012
RCE- CDR system operationally capable of producing 1 kilometer lengths	Q4 2012
2G HTS wire manufacturing with annual production capacity of 750 kilometers of 2G HTS wire	2013

HTS Technology in the Smart Grid

Increasing investment into Smart Grid infrastructure and alternative power generation

- HTS expected to play a crucial role in new emerging electric power generation, distribution and conversion applications
- HTS power applications expected to improve grid reliability and efficiency at a competitive cost to alternatives
- *“The global market for power generation equipment during the 2010 to 2020 period is estimated at approximately \$2.35 trillion”* (Amadee+Company Superconductivity 2011 – 2020 Analysis and Forecasts).



Primary Markets

**Superconducting
Transmission Cables**



**Superconducting Fault
Current Limiters (SFCL)**



**Superconducting
Motors and Generators**



2G HTS Wire has a clear advantage over copper wire

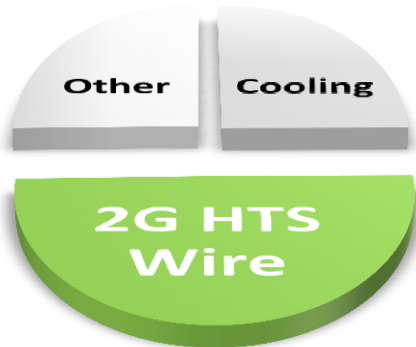
- Conducts 100x the electrical current of the equivalent copper wire
- Extremely low loss

High Power HTS AC Transmission Cable

Benefits of HTS high power transmission cables:

- Reduced right of way requirements
- Reduced construction costs in urban areas by utilizing existing duct structures
- *“Estimated \$275 Billion worth of transmission cable needed globally between 2010 and 2019” (Amadee+Company Superconductivity 2011 – 2020 Analysis and Forecasts)*

HTS Power Cable Cost



2G HTS wire represents a large portion of the overall cable cost

Crucial elements to enable commercial success:

- Improved economics of 2G HTS wire
 - Market entry at <\$100/kA-m for broad commercialization
- Improved 2G HTS wire performance by increasing current carrying capacity
 - The more current the HTS wire can carry, the less wire is needed to build a particular end device
- Availability of wire in volume - reduced lead time
 - The 2G HTS wire market is supply constrained
 - Large quantities of wire are required for power cables – *400 kilometers of 2G HTS wire required per kilometer of superconducting power cable*



Superconducting Fault Current Limiter (SFCL)

Benefits of Superconducting Fault Current Limiter (SFCL):

- Protects against damaging fault currents and blackouts
- Enhanced system safety, stability, and efficiency
- Improved system reliability when renewables are added
- Significantly lower capex than a sub-station upgrade

Resistive Type Limiters Making Headway:

- Compact in size, weight and designed to utilize the resistive properties of HTS wire to eliminate fault
- Scale from medium (35 kV) to high (138 kV) voltages and operate at higher temperatures (77 K)
- An estimated 15 to 30 kilometers of 2G HTS wire is required per 3 phase device

Market Forecast:

- Approximately 250,000 substations exist worldwide
- United States DOE estimates the market size for SFCLs at several Billion dollars over the next 15 years
- Smart grid and embedded generation enhancements will increase the need for SCFLs

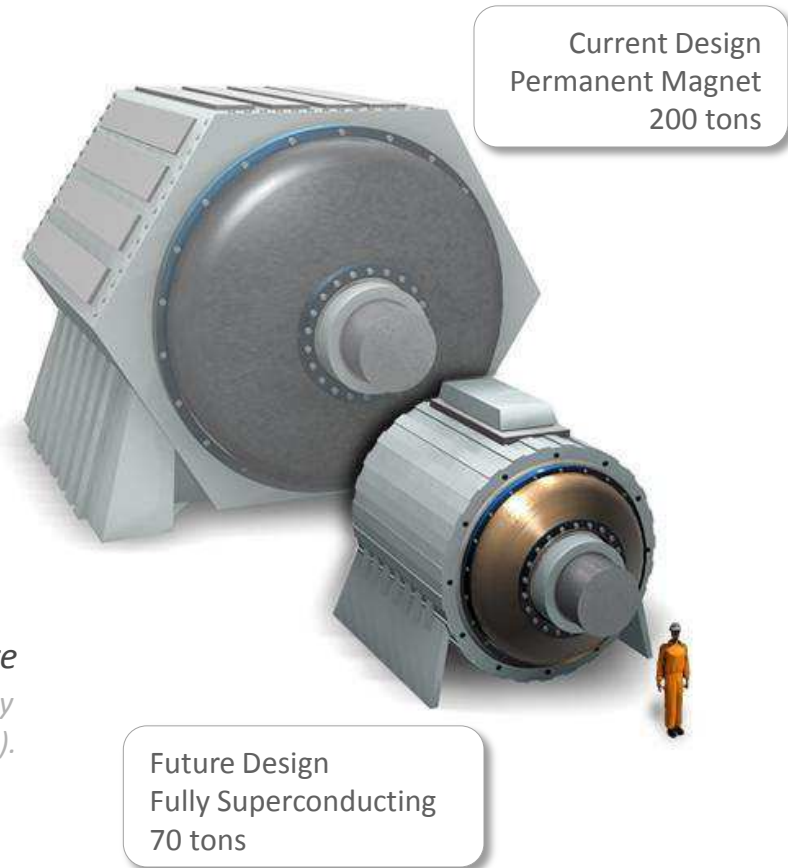


The Benefit of Megawatt Class Superconducting Rotating Machines

Superconducting turbines and other HTS rotating machines appear to have the largest future potential for 2G HTS wire

HTS more than doubles generator output power

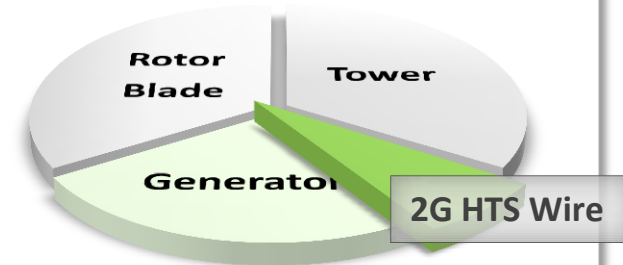
- 2-3x power output for an equivalent sized generator
- 2G HTS wire has a very large current density advantage over copper, reducing volume and weight of generators
 - 4 Amps/sq mm (Copper) vs. 400 Amps/sq mm(2G HTS wire): assuming 500A/cm for 2G HTS wire = 100X improvement
- Size reductions translate directly to cost savings by reducing the amount of magnetic steel, structural steel and copper coils required
- *“Demand for superconductor motors is forecast to be more than \$5.5B by 2019”* (Amadee+Company Superconductivity 2011 – 2020 Analysis and Forecasts).



Future Market – Wind Turbine Generators



Wind Turbine Cost ~ \$16-20M



2G HTS Wire represents just a small portion of the overall wind turbine cost

Generator weight determines power production per tower – the larger the turbine the higher the Return on Investment (ROI) for power producers

- *“Trend towards larger and taller, greater than 10 Megawatt (MW) class rotating machines are potentially enabled by HTS.” (Emerging Energy Research, Offshore Wind Report, 2009)*
- *“A 10% increase in tower height creates a 33% increase in available energy.” (DOE 20% Wind by 2030 Report, 2009)*

Offshore Wind Growth Opportunity

We believe the HTS wind turbine opportunity provides the largest potential demand for 2G HTS wire

- More than 300 kilometers (km) of 2G HTS wire required per 10 MW wind turbine

Source: Superconducting Wind Turbine Generators, A B Abrahamsen and N Mijatovic, 2010

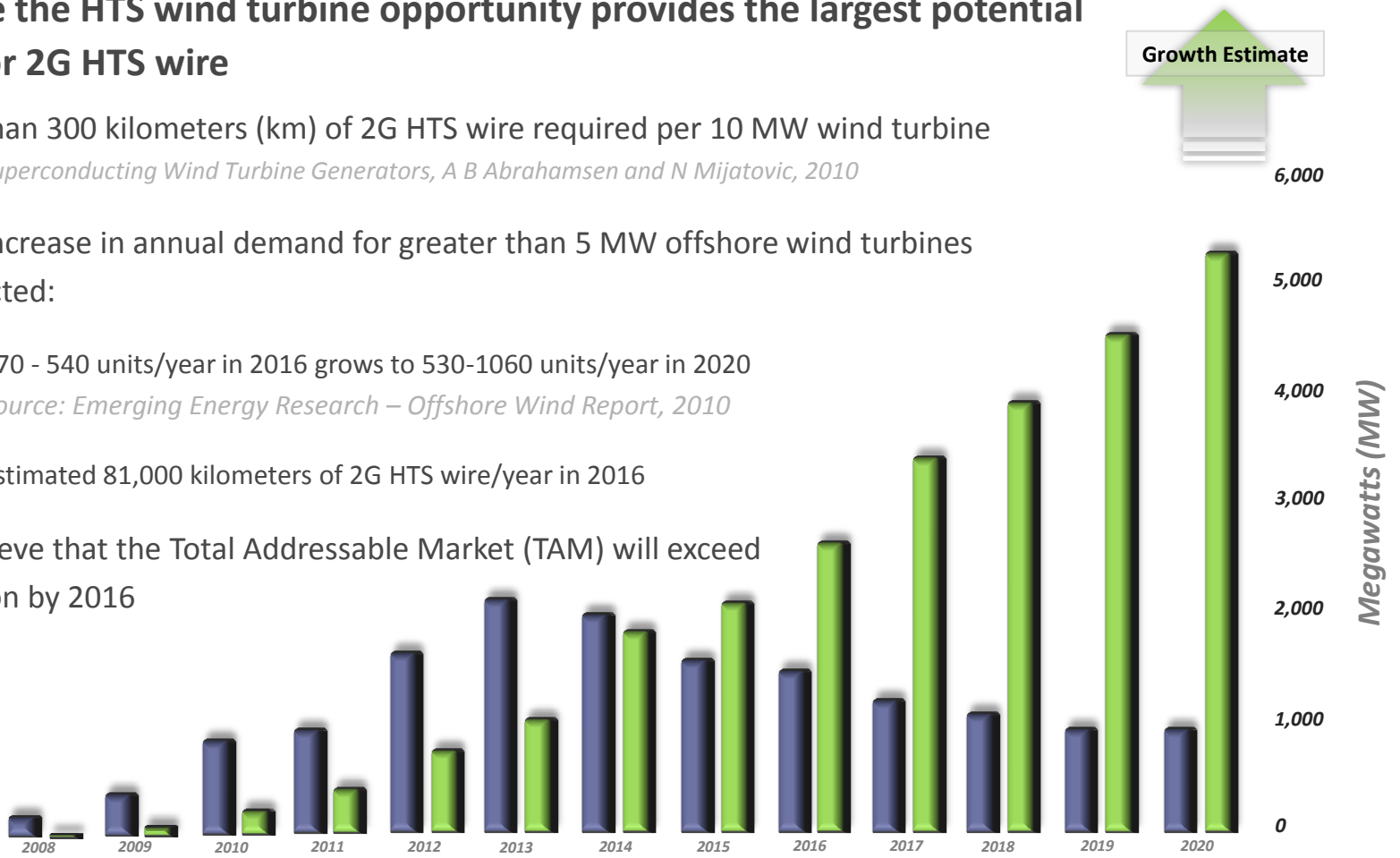
- Rapid increase in annual demand for greater than 5 MW offshore wind turbines is expected:

- 270 - 540 units/year in 2016 grows to 530-1060 units/year in 2020



Source: Emerging Energy Research – Offshore Wind Report, 2010

- Estimated 81,000 kilometers of 2G HTS wire/year in 2016

- We believe that the Total Addressable Market (TAM) will exceed \$1 billion by 2016

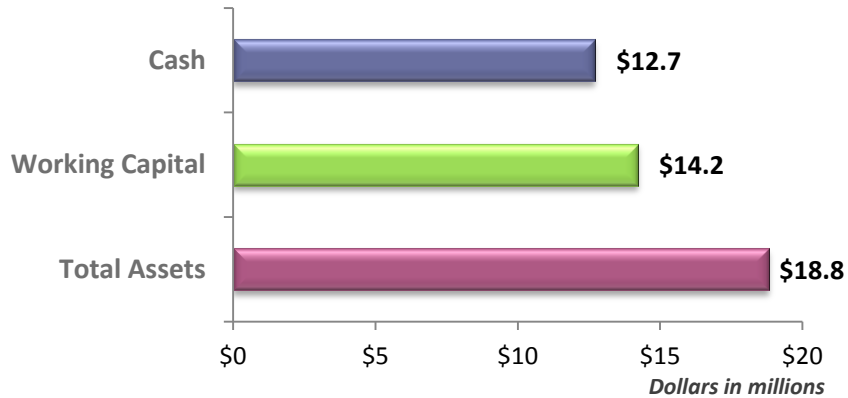


Source Emerging Energy Research, Offshore Wind Report, 2010

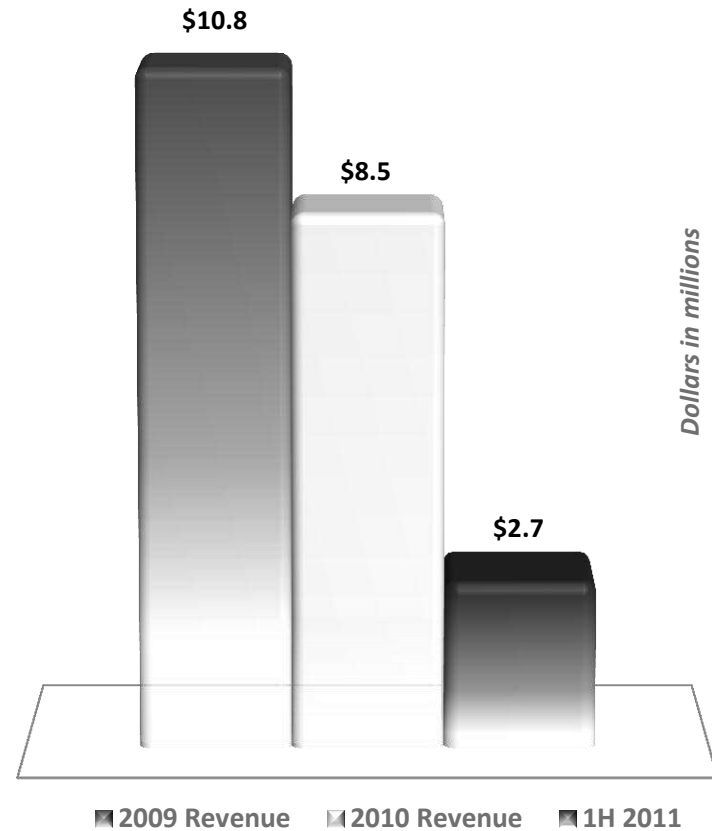
 Offshore Wind Turbine Market Forecast > 5 MW
 Offshore Wind Turbine Market Forecast < 5 MW

STI Financial Highlights

Balance Sheet Highlights (as of July 2, 2011)



Revenue



Summary

Targeting attractive and large emerging markets

- 2G HTS wire TAM estimated at greater than \$1 billion by 2016
- Wind turbines, industrial motors and generators, superconducting fault current limiters (SFCL) and high power transmission cables

Developing 2G HTS wire utilizing extensive IP portfolio and manufacturing expertise

- Over 100 patents issued and pending
- Engaged with industry leading companies for each application
- Development milestones pegged directly to customer requirements

Leveraging Past HTS Commercial Success

- Proprietary expertise in RCE-CDR production technology provides a strong competitive advantage
- RCE-CDR offers a scalable and cost effective solution to meet the demanding needs of these emerging markets

Thank You

