Advanced Gas Turbines:
Strengthening U.S. Leadership in Energy & Manufacturing

American Society of Mechanical Engineers &
Consortium for Advanced Production and Engineering of
Gas Turbines and Rotating Machinery

September 28, 2016

Agenda

- Introduction & Objectives
  - Mike Aller, Consortium for Advanced Production and Engineering of Gas Turbines and Rotating Machinery (CAPE)
- Turbine Fundamentals & U.S. Gas Turbine Industry Overview
  - Dr. Tim Lieuwen, PhD, Georgia Tech & ASME
- U.S. Turbine Manufacturing: Opportunities & Challenges
  - Aviation Gas Turbine Engines – Dr. Tom Prete, PhD, Pratt & Whitney
  - Power Generation and Industrial Applications - Ken Hall, PE, Siemens Energy
- R&D Investments and Workforce Training Opportunities
  - Dr. Karen Thole, PhD, Penn State
- Questions & Answers

Why are Advanced Gas Turbines Important?

- **“Apex Technology” at the convergence of aviation, aerospace & power generation**

- **Critical to U.S. Economic Security**
  - **Primary type of Aviation Propulsion**
  - **Job Creation**
  - **Manufacturing & Exports**

- **Critical to U.S. National Security**
  - **<u>Affordable & Effective Mission Capability – Air, Land, Sea & Space</u>**
  - **Maximize Resources for Operational Needs: Reduce Installation Energy Costs**

- **Critical to U.S. Energy Security & Clean Energy Goals**
  - **Largest Share of Electric Power Generation**
  - **US Natural Gas sourced from and supporting production in North America**
  - **Significant Role as Backstop for Renewable Generation Sources**

Advanced Gas Turbines: Strategic Dual-Use Technology