Gas Turbine Segment
Strategic Plan
FY 2018

Approved June 10, 2018

GTS Leadership Team
Five ASME Core Technologies:

1. Manufacturing
2. Pressure Technology
3. Clean Energy
4. Bioengineering
5. Robotics

Eight ASME Enabling Application & Cross-Cutting Technologies

1. Internet of Things
2. Big Data Analytics
3. Artificial Intelligence
4. Cybersecurity
5. Sustainability
6. Materials
7. Nanotechnology
8. Design Engineering
1. GTS Executive Summary
2. GTS Vision and Mission
3. Overview of GTS Scope & Business
4. GTS Operating Structure
5. GTS Key Strategies in 2018-20
6. GTS Value Proposition(s)
7. GTS Portfolio of Products & Services: Top 3 Deliverables in 2019 – 2021
8. GTS Tactical Implementation Plans
9. GTS Needs & Supports
10. Volunteer Opportunities within the New GTS Operating Structure
GTS Executive Summary

GTS engages groups and individuals developing content focused on gas turbines.

• GTS supports technical event and content planning, and development used to improve the design, application, manufacture, operation and maintenance, and environmental impact of all types of gas turbines, turbomachinery and related equipment.

Key Markets

• North America (declining), Europe (from stable to declining), Asia-Pac (high growth potential)

Top 3 Priorities and Top 3 Deliverables

1. Impact Turbo Expo; increasing to 3500 attendees over the next 3 years (2021)
2. Growth GT India; becoming a break-even conference in Asia in 2021
3. Sustainability Developing New GTS Products: (i) AM & Repair for GT in 2019; (ii) MRO & Digitalization in 2021;

Tactical Implementation

• GTS Operating Guide
• Alignment to developed Roles, Responsibilities and Deliverables for all SLT and all members

GTS Financials and Risks

• Other societies are considered potential competition to Turbo Expo and other GTS offerings that must be scanned and assessed routinely
Gas Turbine Segment (GTS)

Vision
To be the world’s leading convener and communicator of gas turbine technology and related innovation that benefit society.

Mission
To advance clean, reliable, and affordable gas turbine technologies by
- building a global technical community for knowledge sharing,
- promoting thought leadership and professional development, and
- inspiring innovation in emerging fields.
# Overview of GTS Scope & Business

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<tr>
<th>Role</th>
<th>Responsibilities</th>
<th>Deliverables</th>
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<td>GAS TURBINE SEGMENT (GTS)</td>
<td>□ engages groups and individuals developing content focused on gas turbines.</td>
<td>□ Tutorials, Panels, Journals, Papers, Exhibition, New Conferences and content</td>
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<td>□ supports technical event and content planning, and development used to improve the design, application, manufacture, operation and maintenance, and environmental impact of all types of gas turbines, turbomachinery and related equipment.</td>
<td>□ Annual 5-day ASME Turbo Expo (2018) &lt;br&gt; □ Biennial 2-day GT India Conference (2019) &lt;br&gt; □ <em>new 2-day Advanced Manufacturing &amp; Repair for GT (Mar 2019)</em></td>
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<td>SEGMENT LEADERSHIP TEAM (SLT)</td>
<td>□ improves existing conferences, develops new conferences and content focused on gas turbines, and works across the enterprise to identify new products, programs, educational opportunities and services to meet identified needs of key stakeholders in the segment.</td>
<td>□ Continuous Improvement workgroups and sessions &lt;br&gt; □ New product, programs and services &lt;br&gt; □ Development work sessions</td>
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<td>□ Leaders partner with ASME Groups, Committees, staff and other individuals to develop all products and content.</td>
<td>□ GTS executive, standing, and ad-hoc committees &lt;br&gt; □ Fiscally responsible budgets and Strategic Plans</td>
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GTS Key Strategies
2018 - 2020


2. Establish an IGTI Executive Committee with clear roles, responsibilities, expectations and deliverables by May 2018 [Owners: Jaroslaw, Rich and James] On-going

3. As part of the annual strategic planning process develop a portfolio of existing and new GTS Offerings (Products, Programs, and Services) - Prioritize and align resources based on ROI by June 2018 [Owner: Angelique] On-going

4. Implement one new GTS offerings (product, program, service) that creates the most value by June 2019 [Owner: Rich] On-going

5. Develop the 3-to-5 year Outlook (Gantt timeline) of the GTS strategic deliverables by Sep 2018 [Owner: Nicole]
1. GTS Leadership improves existing conferences, develops new conferences and content focused on gas turbines, and works across the enterprise to identify new products, programs, educational opportunities and services to meet identified needs of key stakeholders in the segment.

2. GTS annual generates essential revenues that enable the Society to achieve the mission, realize the vision and implement key strategies. Annual revenue growth potential is about 10% through FY 2021.

3. The well-established and successful GTS and IGTI global brands enable the full participation of the Aviation and Transportation industries, while supporting the ASME core technologies of Clean Energy, Manufacturing, Pressure Technology, and Robotics for Gas Turbine Enterprises.
GTS Portfolio of Products & Services
Top 3 Deliverables in 2019 - 2021

1. Turbo Expo – FY19, FY20, FY21
   - HIGHLIGHTS: (1) Leverage Event and Paper Quality, & (2) Attendee/Paper Ratio above 3.0

2. GT India Conference – FY19, FY21
   - HIGHLIGHTS: Positive Cash-flow & 400+ Participants

3. New Products & Services
   - Advanced Manufacturing & Repair for GT – Berlin, Mar 19-20, 2019
     - HIGHLIGHTS: 150+ Stakeholders
   - MRO & Digitalization – 2021:
     - HIGHLIGHTS: 200+ Stakeholders
GTS Tactical Implementation Plans

Strategic Plan (SP) approved (May’18)
Operating Guide (OG) approved (May’18)

SP & OG presented to Key Stakeholders & GT Society

OG & SP Roll-out Phase
- Dedicated Resources
- New Event Ideas

Revision of GTS Strategic Plan; each Sept

Product 1) Mar 19-20 AM & Repair for GT in Europe
Product 2) AM & Repair for GT in China
Product 3) MRO & Digitalization

- GT-India 2019
- TE20 London
- TE21 Pittsburgh

ASME Fiscal Year FY18/19 ASME Fiscal Year FY19/20 ASME Fiscal Year FY20/21
GTS Needs & Supports

Dedicated Resources are being searched for
(1) IGTI as Executive Committee (starting in July 2018)
(2) Working Groups (in FY19)
(3) Standing Committees (June 19)

Risk Identification and Market Assessment – be done in FY18/19

TEC Budget for new GTS products triggered by new Executive Committees and Working Groups

A sound communication on social platform
Volunteer Opportunities within the New GTS Operating Structure
Gas Turbine Segment (GTS)

GTS Leadership Team Members 2018-2019:

• Richard Dennis, GTS SLT Leader
• Nicole Key, Vice Leader
• Paul Garbett, Member
• Eisaku Ito, Member
• Anestis Kalfas, Member
• Jaroslaw Szwedowicz, Member
• Mark Zelesky, Member
• Damian Vogt, Member, IGTI EC Chair, TEOC Liaison
• James Maughan, Member, Treasurer
• Ruben Del Rosario, Special Advisor
• Tim Lieuwen, Special Advisor, Clean Energy TAP Member
New Products & Initiatives – Working Groups

• AM & Repair for GT Committee Members
  – Co-chairs, Richard Dennis & Jaroslaw Szwedowicz

• MRO & Digital
  – Pending start-up

• Others TBD
Standing Committees

• Performance Evaluation Committee Members
  – Angelique Vesey
  – 2 additional members needed

• International Student Committee Members
  – Anestis Kalfas
  – 2 additional members needed
• Communication & Publication Committee
Members
(GGTN, Journals, Social Media)
  – Paul Garbett
  – 2-3 additional members needed

Subcommittee: GGTN Editorial Committee – Natalie Smith, Chair
- All member positions filled (6)
Standing Committees (cont’d)

• Professional Development Committee
  – Mark Turner
  – 2-3 additional members needed

• International Awards and Honors Committee
  – Eisaku Ito
  – 2-3 additional members needed
IGTI Executive Committee

• International Gas Turbine Institute (IGTI) EC Members
  – Damian Vogt, Chair
  – Nicole Key, Member
  – James Maughan, Member
  – Will need additional members for the 2020 Fiscal Year
IGTI Technical Committees

- Aircraft Engine
- Ceramics
- Coal, Biomass & Alternative Fuels
- Combustion, Fuels & Emissions
- Controls, Diagnostics & Instrumentation
- Cycle Innovations
- Education
- Electric Power
- Fans and Blowers
- Heat Transfer
- Industrial & Cogeneration

- Manufacturing Materials & Metallurgy
- Marine
- Microturbines, Turbochargers & Small Turbomachines
- Oil & Gas Applications
- ORC Power Systems
- Steam Turbine
- Structures & Dynamics
- Supercritical CO2
- Turbomachinery
- Wind Energy
Other IGTI Committees

• Honors & Awards Committee
  – John Blanton, Chair
  – All member positions filled

• Student Advisory Committee
  – Wisher Padel, Chair
  – All member positions filled
GT India Executive Committee

• GT India EC Members
  – Prof. Joseph Mathew (IISc), Chair
  – Sasikumar Muthuswamy (RR), Vice Chair
  – Joseph Machnaim (GE), Past Chair
  – Hiteshkumar Mistry (GE), Chair, Student Seminars
  – Abdul Nassar (SoftInWay), Vice Chair, Student Seminars
  – Prof. BVSSS Prasad (IITM), Member
  – Dr. N K Singh (BHEL), Member
  – Dr. Ravikanth Avancha (GE), Member
  – V Ramana Murthy (GTRE), Member
  – Ruben Del Rosario (NASA), Member - GTS SLT Representative
  – Nicole Key (Purdue Univ.), Member - GTS SLT Representative
Other GT India Committees

- **India Student Committee**
  - Not yet formed

- **India Awards & Honors Committee**
  - Not yet formed
Conference Organizing Committees

• Turbo Expo 2019 Organizing Committee Members
  – Atul Kohli, Conference Chair
  – Ruben Del Rosario, Executive Conference Chair
  – Harald Schoenenborn, Technical Program Chair
  – Dilip Prasad, Review Chair
  – Graham Pullan, Vice Review Chair
  – Ardeshir Riahi, Vice Review Chair
  – Wing Ng, Vice Review Chair
  – Patricia Cargill, Special Advisor to Review Chair
  – David Bogard, Tutorial Chair
  – Damian Vogt, Gas Turbine Segment Liaison
  – Robert Rasmussen, Local Liaison Chair
Conference Organizing Committees (cont’d.)

• GT India 2019 Organizing Committee Members
  – Mariasundaram Antony, Conference Chair
  – A M Pradeep, Review Chair
  – Shraman N Goswami, Technical Program Chair