



Operational Excellence Services

Decarbonization Sustainable Combustion & Heating Optimization

Achieving stable heater operation and reducing carbon emissions



Contact Us

 [Technology Inquiries | Contact Us | JGC HOLDINGS CORPORATION](#)

Access to Our Homepage

 <https://www.jgc.com/en/business/epc/operation-maintenance/service/>

Sustainable Combustion & Heating Optimization

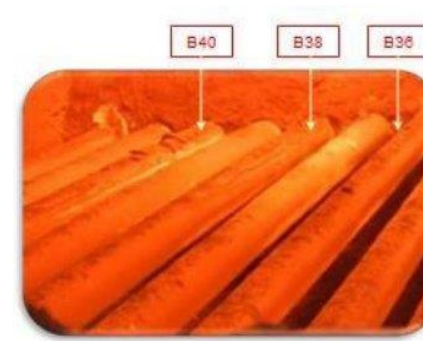
Do you have any of these issues / challenges ?

- ☹️ **Frequent trips, tube damage, or unstable heater operation**
- ☹️ **Pressure to reduce CO₂ emissions and meet CI^(*) targets**
- ☹️ **Difficulty in identifying root causes of incidents**
- ☹️ **Integration of multiple fuel networks**
- ☹️ **Transition to electrification and reduced fossil fuel dependence**

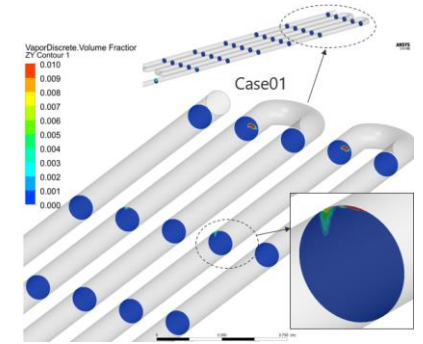
(*) carbon intensity

Our Solutions

- Identify optimal decarbonization pathways
(efficiency improvements, hydrogen, electrification)
- Evaluate combustion and heating system performance
(flame stability, NO_x, flashback, control philosophy, fuel systems)
- Perform root cause analysis
(based on operational data and incident history)
- Identify bottlenecks and engineer practical retrofit solutions
(based on design and operational data)
- Implement solutions and ensure no recurrences
(engineering, modification, and operational improvement)



Operating Conditions
Assessment



Fluid Behavior
Assessment



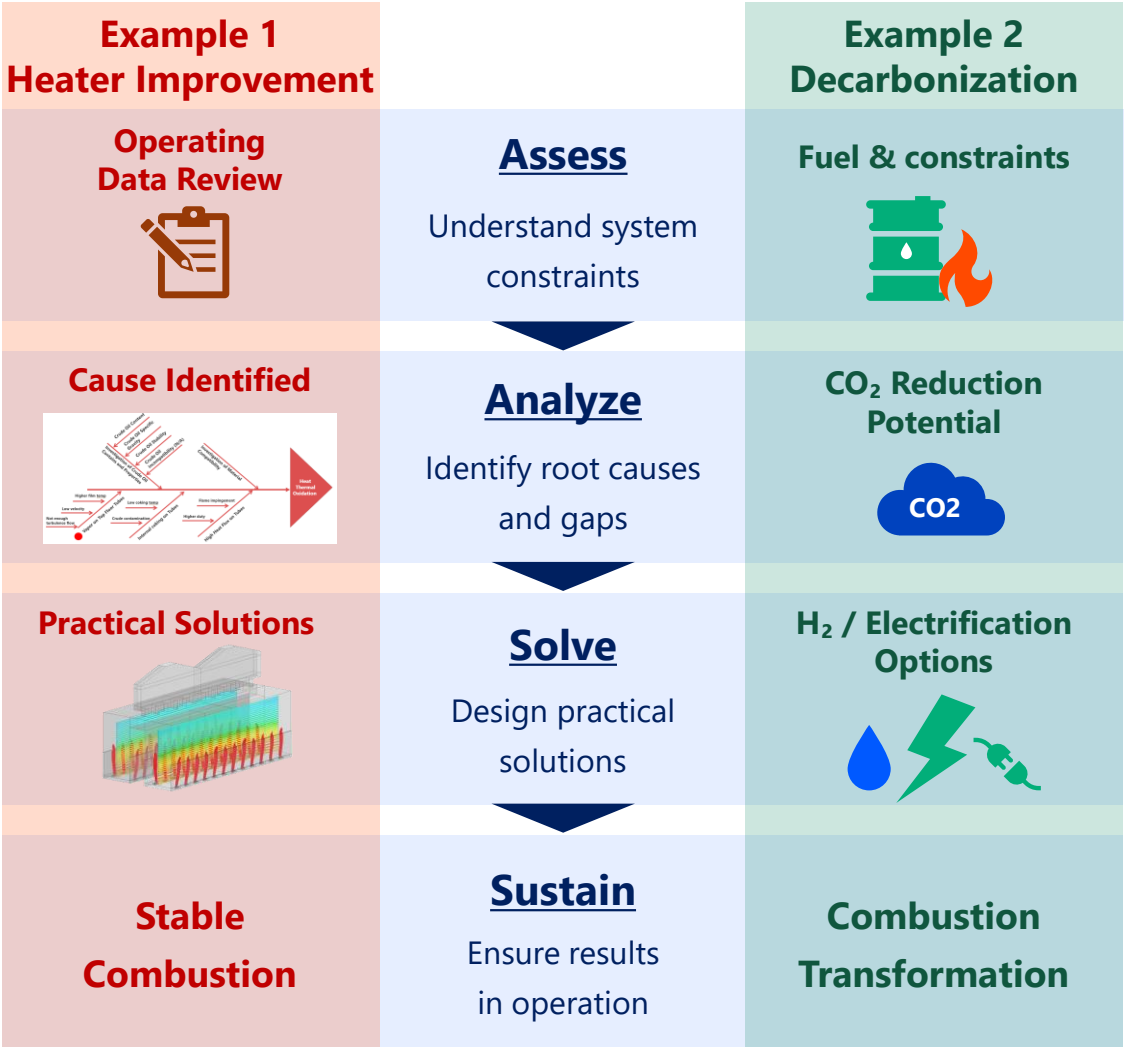
Detailed Tube Damage Assessment



Driving the Transition to
Sustainable / Stable operation

Sustainable Combustion & Heating Optimization

How We Deliver Sustainable Heating Optimization



Our Strength

End-to-End Delivery from Analysis to Execution

- Deep expertise in combustion and system interfaces
- Integrated engineering across combustion, process, and advanced analysis (CFD, simulation)
- Extensive retrofit know-how for existing facilities
- Practical solutions as an EPC contractor, covering entire plant systems
- End-to-end capability from study to FEED and EPC

Our Experiences

100+

Plants

Evaluation, Improvement and Troubleshooting for IOC and NOC customers

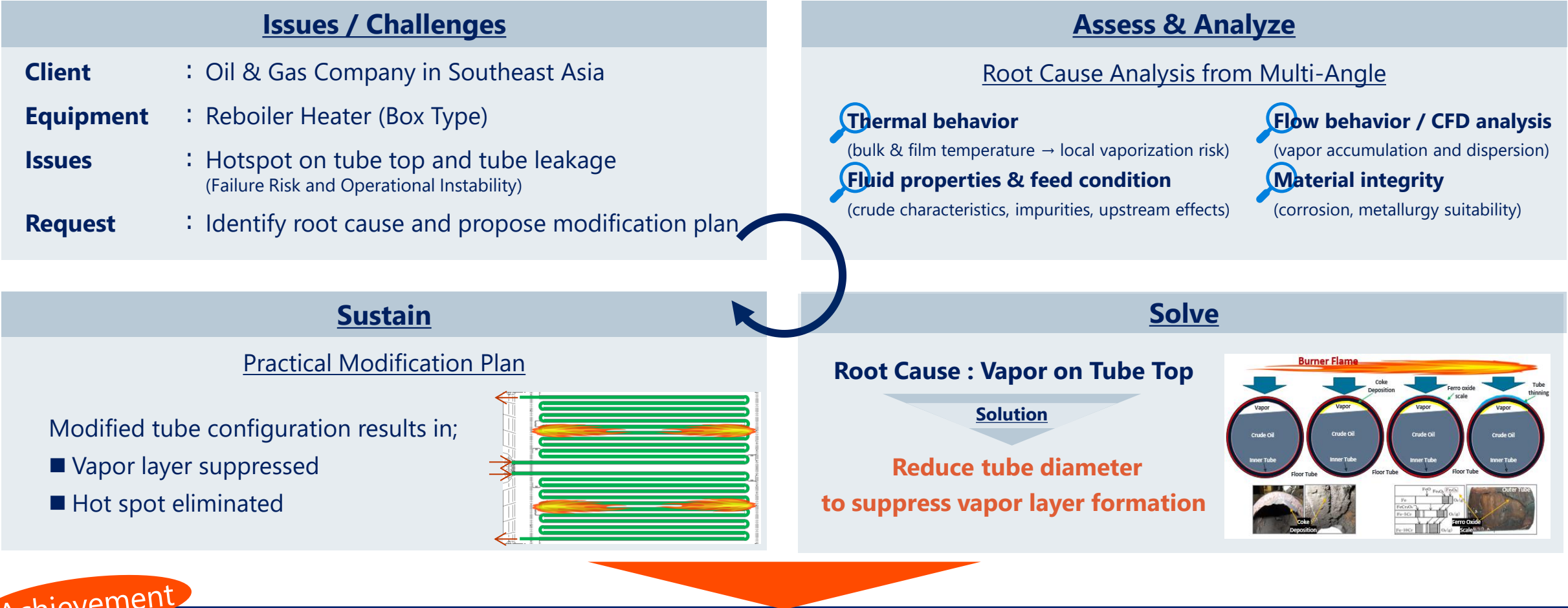
100+

Cases

Evaluation, Improvement and Troubleshooting cases

Sustainable Combustion & Heating Optimization

Case Study : Furnace Tube Overheating (Root Cause Analysis and Optimization)



Achievement

Identified root cause and delivered a practical solution enabling stable heater operation and improved profitability