

## Phase 1 Project Publishable Summary

### **1. Summary of the context and overall objectives of the project (For the final period, include the conclusions of the action)**

This section should include information on:

- What is the problem/issue being addressed?
- Why is it important for society?
- What are the overall objectives?

Every day, millions of euros of valuable heat energy is wasted by being vented into the atmosphere. Sources of this wasted heat include drying and curing ovens, pollution control equipment, ceramic kilns, chemical manufacturing, petroleum refining and engine exhaust. Despite the huge market, there are very few effective solutions exploiting waste heat from low and medium temperatures. Cool Energy has developed the ThermoHeart™ engine to utilise the waste heat emitted by these industries. The ThermoHeart™ engine will help to reduce the harmful emissions released by industrial processes and improve their energy efficiency.

### **2. Work performed from the beginning of the project to the end of the period covered by the report and main results achieved so far (For the final period please include an overview of the results and their exploitation and dissemination)**

Cool Energy undertook a full analysis of the both the technical and business potential of the ThermoHeart™ engine. Reliability and performance testing was undertaken on the 5<sup>th</sup> generation prototype and an analysis of the impact of different designs completed. The ThermoHeart™ engine demonstrated 31% efficiency converting waste heat to electricity, which was significantly higher than the closest competitor at the same temperature (18%). Cool Energy deepened its market analysis into the selected target markets (Germany, Italy and the UK) and established financial projections based on the company growth and potential sales. Finally, Cool Energy built up key partnerships in the EU which will be fundamental to the successful completion of the innovation project and market launch.

### **3. Progress beyond the state of the art and expected potential impact (including the socio-economic impact and the wider societal implications of the project so far)**

The expected outcome of the project is to complete value engineering to produce a cost-effective engine and perform necessary activities for the industrial scale-up. Cool Energy will also perform demo trials in two different applications to demonstrate technical feasibility in multiple industries. The ThermoHeart™ development will boost economic growth and create jobs within Cool Energy and on a wider scale within the industrial sector in Europe.

### **4. Address (URL) of the project's public website**

[www.coolenergy.com](http://www.coolenergy.com)

### **5. Images attached to the Summary for publication**

*Include at least one picture of the product at its current stage or of testing being performed etc.*