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| **Description of Idea (A)**  Waste heat recovery system based on components already available within the HVAC system on light vehicles. All system components would need some degree of redisgn to allow for use as both a cooling and energy generating system.  **Problem being solved**  Increased vehicle efficancy. | **Product Technology (A)**  Could utlizize some technology from smart actuators for design.  Low liabilty if product fails  Would be redisgning entire system not only a certain components. To my knowledge this system does not exist on any vehicles, however some patents do exist in the area. | **Market (A)**  Could relate to smart actuators group | **Customer (A)**  Any OEM | **Competitors (B)**  No competitors known at this time. |
| **Value Proposition (A)**  Will lead to fuel savings which all OEMs desire. | **Key Resources (B)** | **Key Partners (B)** | **Key Activities (B)** | **Timing Milestones (B)** |

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| **Description of Idea (A)**  You might include sketches, diagrams, drawings, and CAD data.  **Problem being solved (A)**  Describe the problem domain (usage, known problems, environment, interfaces, architecture, user expectations) for your idea | **Product Technology (A)**  Most products for GHSP will be highly engineered. This section should clarify in detail a significant product and/or process technology, concept, or strategy on which this proposal is based. Key requirements may be identified. Demonstrate our knowledge of the challenge, and our ability to achieve all expectations. Some products will be built on “enabling technology” for example shifters are linked to transmissions. If there is base or enabling technologies, they should be made clear in this section. How might we develop intellectual property? What is the liability exposure risk when the product fails? | **Market (A)**  The GHSP Sandbox is currently defined as “Shift Systems and Smart Pumps for the global automotive light vehicle market”. Does this idea fall within this definition? Is it a potential adjacency? If so, what is the linkage? Would a new market/product area be defined with this idea? If so, how do we assess this market potential? Consider B2-How will the product reach the intended customer? B6-How quickly is the intended market changing? B7-How mature is the market? B18 What are potential key marketing strategies | **Customer (A)**  Who is the direct GHSP customer?  Who is the end user of the product?  How familiar are we with our direct customer? Do we have any strong, long term relationships with potential customer targets?  What is the motivation of our customer for this new technology (i.e. – no other solution, cost sensitivity, regional/global presence, etc)) | **Competitors (B)**  In looking at the competition for the proposed technology, what are the direct competitive threats as well as who might move into this technology space based on their core capabilities (i.e. – Google into autonomous vehicles!). Do the competitors have any barriers to entry for GHSP (Patents, etc)? Will this new idea evolve or obsolete a competitor’s product? |
| **Value Proposition (A)**  Is this a new invention/design?  - Why would a customer want this new idea?  Or an improvement to an existing product?  - Why is this the better mouse trap?  - What competitive advantage (relative to existing products) does this idea offer?  Is it Patentable?  The ideal value proposition is concise, and it appeals to a customer's strongest decision-making drivers.  What is the estimated size of the opportunity? Volumes, Price targets, etc | **Key Resources (B)**  What engineering, sales, marketing, manufacturing, and program management resources/skills are required to develop this idea?  Describe how this will fit into GHSP’s structure. Mention the disciplines needed to come together to make our concept work, what we will do to bring them together, and scale of the development effort. Consider any timing impacts to resource need. Are there any manufacturing/process unknown that impact resource needs? | **Key Partners (B)**  Are there key partners outside of GHSP that would be required to support enabling technologies?  Are there other partners that would be beneficial or required to support the product development/production and sales/distribution value chain? | **Key Activities (B)**  What actions need to be completed quickly to further this development and support the project decision process?  (NDA, patent search, patent disclosure, strategic partner meetings, preliminary simulation or other evaluation?) | **Timing Milestones (B)**  What milestones will drive this technology into the market? Will it support new legislative requirements (Safety, CO2, etc?) Are there market drivers that will influence the adoption rate (connected car, etc)? Based on our knowledge of our customer’s platform cycle plans, is there a clear “window of opportunity” for this technology to launch? |