

MINI-ORC TURBOGENERATOR: THE UPCOMING LEAP FORWARD?

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ABSTRACT

Much R&D is currently devoted to obtain commercial ORC power systems generating few kilowatts up to few tens. The driver application is currently waste heat recovery from long-haul truck engines, but many other applications can be envisaged, once these units successfully reach the market. This is not a new idea, and a brief history will illustrate past developments, useful for the context. The design paradigm of such systems is bound to be quite different from mainstream stationary ORC power plants, as mini systems will be designed for standardized large series production. The small capacity offers at the same time challenges and opportunities. The small and fast turbine is one such challenge, and options and concerned research are briefly addressed. Several new applications based on these miniature power plants are described, and ideas for the path forward proposed.