



AeraDIGM defines the new paradigm for refrigeration. Every refrigeration task is defined by two working temperatures, T_{high} and T_{low} . The old paradigm, called “divergent refrigeration” necessarily moves the refrigerant from a temperature BELOW T_{low} to a temperature ABOVE T_{high} , temperatures which diverge from the refrigeration task itself. AeraDIGM moves the air from both sides of the refrigeration task directly toward each other, thereby converging across the midpoint between the two working temperatures or some other convergent temperature which optimizes the performance of the system overall.

AeraDIGM cuts both heating and air conditioning costs by 75%. That savings results from eliminating the vapor-compression sub-system, along with its refrigerants. That takes care of the global ban on HFC refrigerants (Kigali, 15Oct2016). The AeraDIGM incentive, a 75% reduction in heating and cooling costs, can take the world 25% of the way to the 2050 Carbon Target as well.

AeraDIGM replaces fans with pumps. Using the same mass flow of air required by a vapor-compression system as the refrigerant itself, air power in refrigeration moves the same heat with the same energy previously spent just running fans. AeraDIGM technology exploits the well proven but seldom used low pressure capability of common compressors. Moreover, AeraDIGM engineering transforms the otherwise wasted energy spent just moving air and changing its temperature. What was a “loss” for a compressor becomes a “gain” in refrigeration. And thermodynamic efficiency (COP=Heat moved/Work required) skyrockets as pressure ratios are reduced.

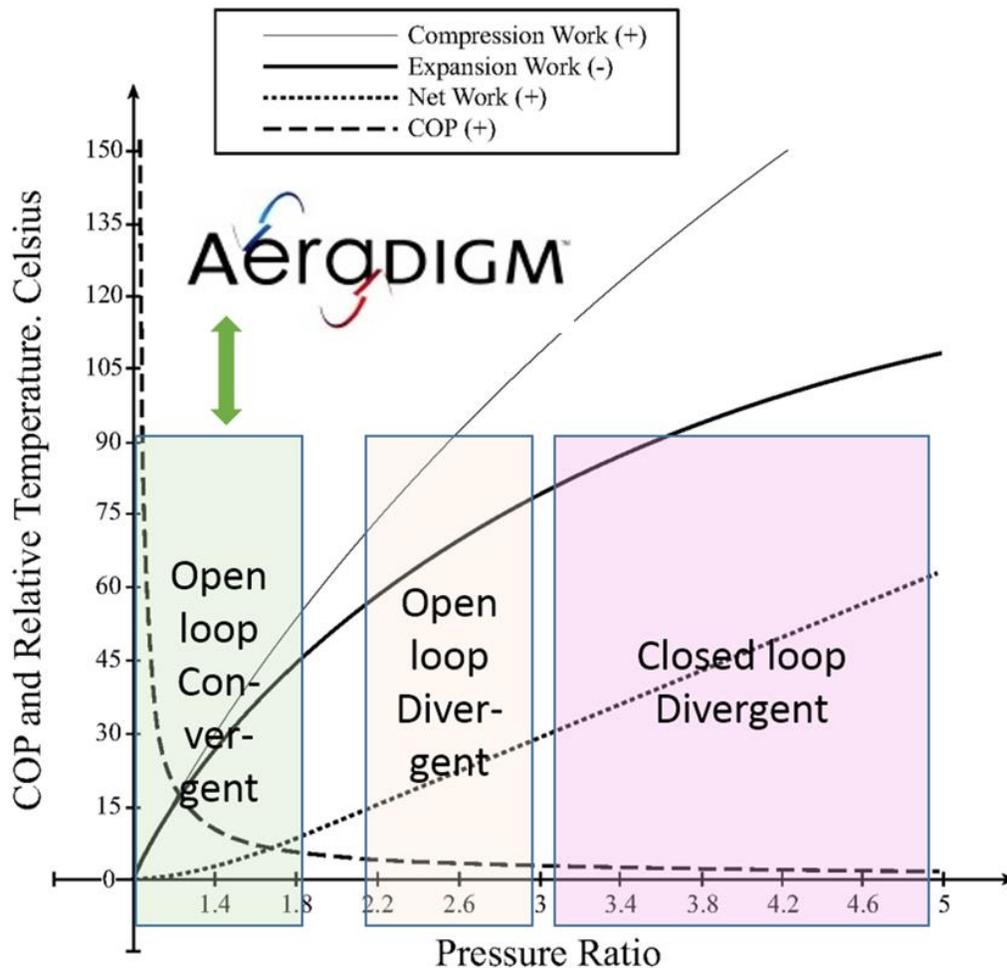


Figure 1: Comparison of Air Cycle Efficiencies

Turning a BIG corner here after submitting two more patent applications on top of five already granted. All present pumps, whether refrigeration or engines, waste substantial amounts of energy. Our US patent refines protection on GATWO (Getting All The Work Out), a set of techniques to eliminate wastes in mechanical pumping systems. Global application protects a breakthrough understanding of refrigeration and how it can be delivered.

It's time to push into development and funding, to put AeraDIGM patents, pumps, and methodology to work. By licensing our patented manufacturability methods to selected pump designers, we provide an incentive for innovative new designs which we can protect even though the designs on their own may not be eligible for patent protection. Our revenue strategies include the licensing of intellectual property and anticipate ongoing mutual re-licensing of extensions developed by our business partners.

Commercial demonstration and market segmentation remains to be completed in collaboration with innovation partners. Feasibility is well certified by the performance of mainstream pumps as previously noted. Only the practicality of sizing speeds and feeds for modified and repackaged market targets remains to be completed in relation to manufacturing scale.

AeraDIGM technology inevitably displaces an established global industry, so the threat of hostile takeover and suppression is considerable. Our priority is for immediate alliances with several large and well established players whose present products position them for explosive growth in partnership with AeraDIGM. This presents an immediate opportunity for participation by state, federal, or venture funding in alignment with these partnerships, but the window is closing rapidly. Our deadline is driven by the need to fund country-specific patent protection before February 18, 2018.

I am writing to you with appreciation for your past expressions of support and interest, for your willingness to listen as our ideas have evolved. Thank you. We are now able to invite your suggestions and participation more directly in line with the steps outlined above. Will you help us find some academic authorities who might be encouraged to publish comments on the refrigeration realities and solutions as seen by AeraDIGM? With some urgency, we seek third party validation from any source. The only thing that blocks adoption now is the power of established ideas.

AeraDIGM technology in HVAC is our starting point. We look forward to following up with other applications in the low pressure product space. I look forward to hearing from you.

Many thanks,
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