



22 April 2015 in Bangkok, Thailand

Application and technology trends

Industrial refrigeration & heat pumps

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CHALLENGES and DRIVERS



Drivers in A5 and global context



Drivers in A5 and global context

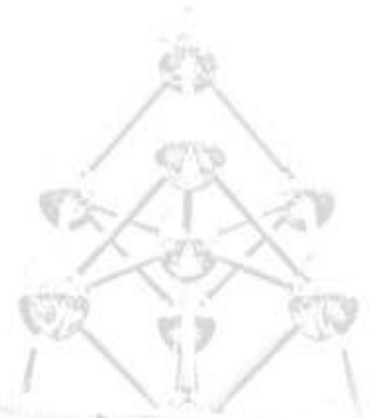
Ammonia is the ultimate choice



Drivers in A5 and global context

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Easy to use and intrinsically safe, controlled environment



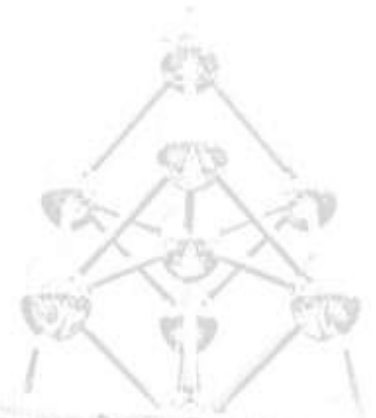
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Is a zero-GWP refrigerant (nice to have)

Outperforms most low GWP refrigerants in overall efficiency : economic choice

Challenges



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Increase availability of equipment



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Support in education & training*



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Facilitate experience buildup



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Standards and legislation



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public awareness

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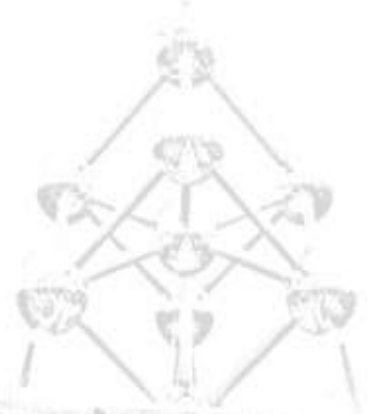
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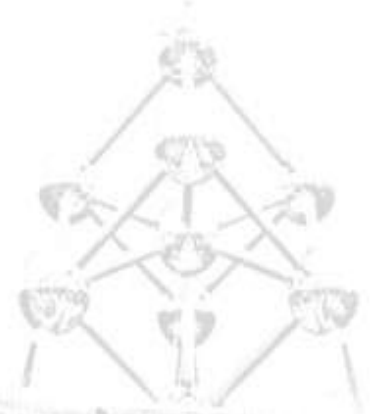
financial support

Opportunities



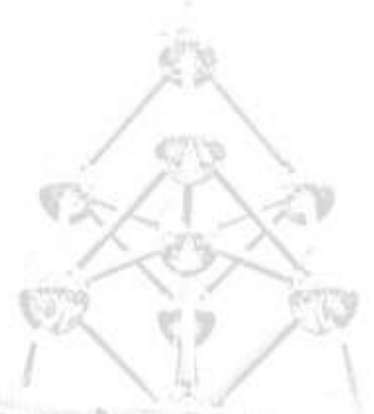
Opportunities

Semi-hermetic industrial compressors



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low refrigerant charge systems*



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Alternative condensing techniques

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Alternative condensing techniques

Good practice

Ammonia chiller

*Semi-hermetic piston
PM motor
Ultra -low refrigerant charge*



Ammonia-CO2 cascade chiller
Compound 2stage ammonia compressor
Semi-hermetic PM motor
Ultra -low refrigerant charge

NewTon 3000 Modular Skid



Policy themes

Decarbonization
Long-term energy & climate goals
Energy efficiency
Inclusive thermal heat systems



Thank you

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