



**Turners and Growers Kerikeri:
Efficiencies in a HC / Glycol solution for
kiwifruit cooling.
Matthew Darby - EcoChill**



T&G Kerikeri Site

4,200m² refrigerated space including pre-coolers.



Problem

- Not providing optimal conditions.
- Need to reduce running costs –use of existing footprint.
- Looking for added value and to support sustainability outcomes.

Solution

- Reengineered precooling.
- Refurbished 2 x R22 coolstores to optimal conditions.
- **2 x New Coolstores** EcoChill Kiwi: HC / Glycol Advanced System design.
- Perfect case study comparison.

Barrier's



Fear

Capital Costs

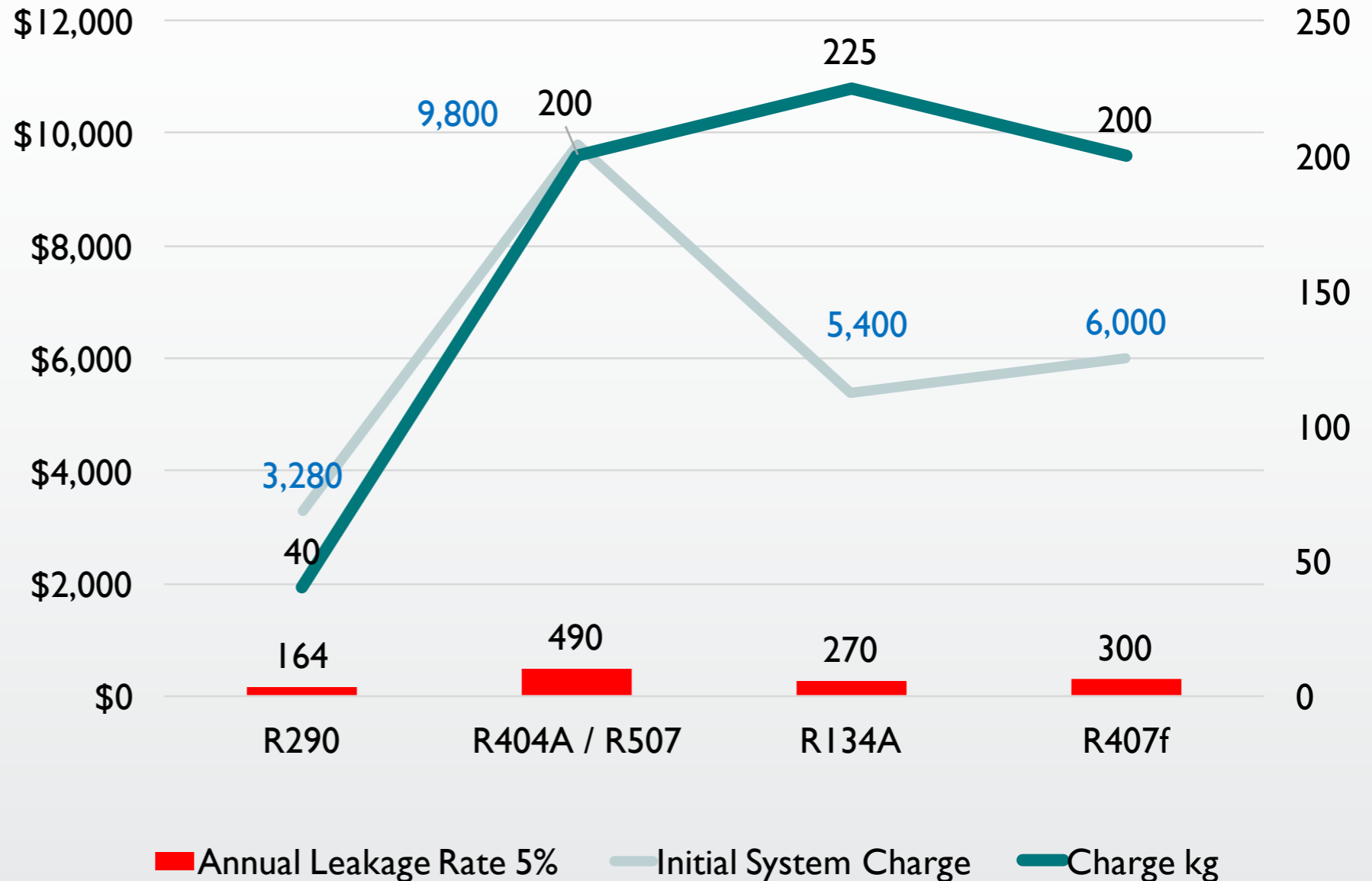
**Local Governing
Bodies**

Solutions

- Education.
Reality of use of propane - design and safety consideration.
- Focus on total / operating cost and ROI.
- Move from cost to value / other goals.
- Education on systems and regulations.
- Build trust: strict / over compliance.

Costs

- 12% premium on capital cost vs standard system.
- 19 month ROI
- 16% less p.a. repairs and maintenance.

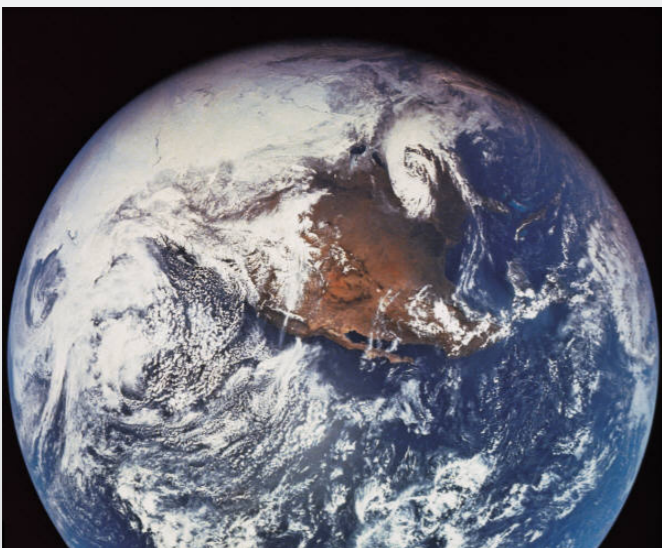


“**36%** saving on energy costs while cooling more pallets”

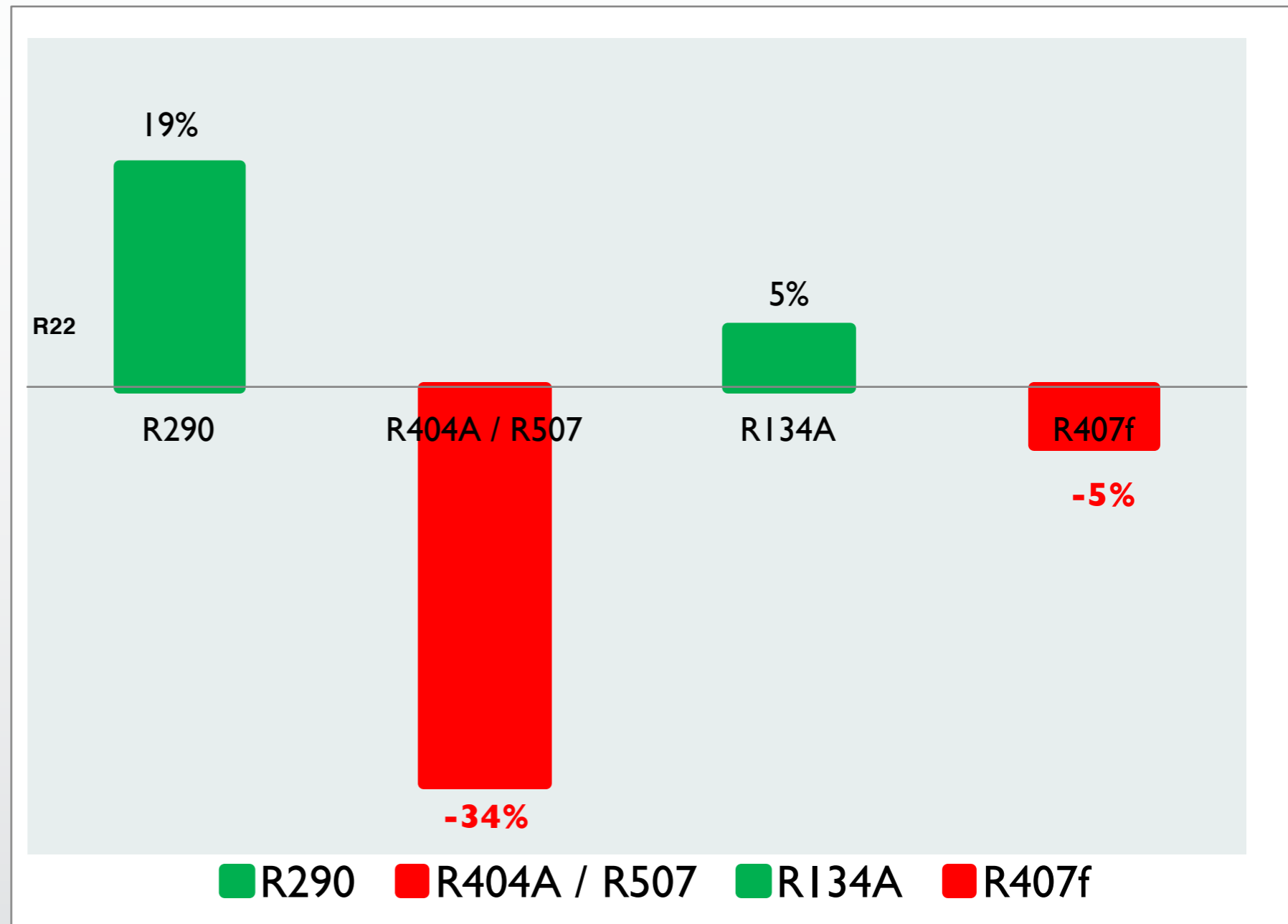


	Store capacity (Pallets)	Cost to Cool (Per Pallet/Day)	% improvement
R22	840	\$0.34	Baseline
EcoChill	864	\$0.25	36%

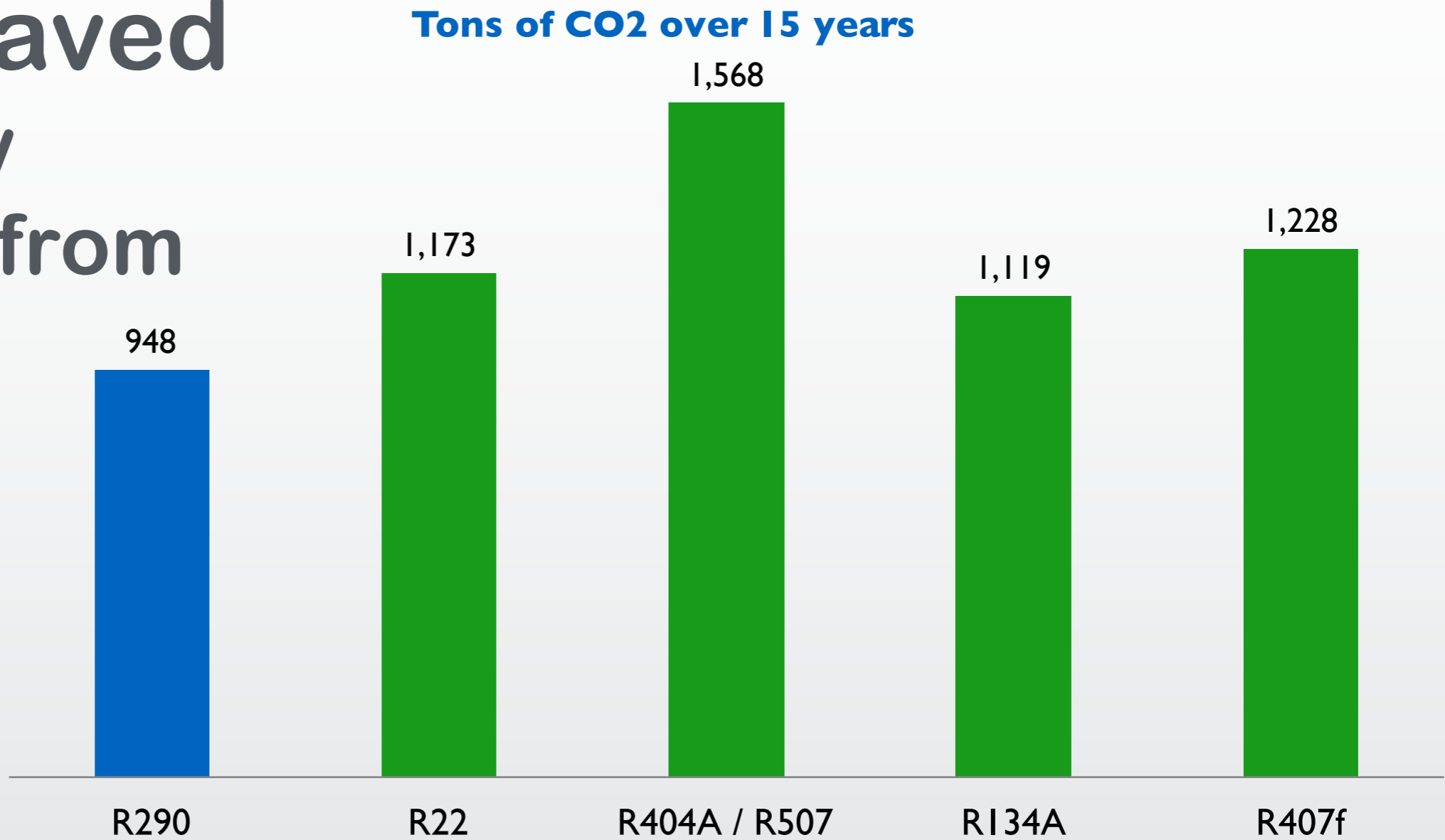
“TEWI:
19%
better off
than an
R22
system”



Total Equivalent Warming Impact versus R22



“225 tonnes
of CO2 saved
- the yearly
emissions from
43 cars.”



Total Equivalent Warming Impact

“Refrigeration:
providing
competitive
advantage.”



- Pack
- Precool



- Flat temperature profile
- High humidity
- Energy efficient
- Low maintenance
- Constant system performance



- Increased margin
- Higher “vine to table” volumes

Maintaining Optimal Conditions



Lessons learnt

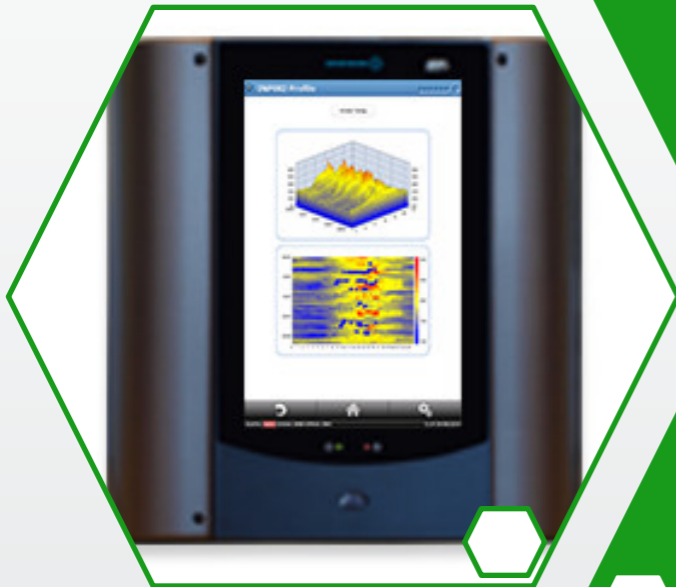
- Find an internal NR advocate.
- Manage scare mongering – both internally and externally.
- Market project internally.
- Education is key.
- Cater for costs and sustainability audiences in project documentation.

Future plans

T&G: NR
national
distribution
and coolstore
sites

HC systems:
Minimising
charge the
future.

Controls and
predictive
diagnostics



Actions

Collaborate globally.

Communicate Reality.

Educate.

Liaise Emergency Services.

Accreditation.

Be Involved / Advocate.

To Do

NR Education Centre.

Standards Review and Enforcement.

Wider industry understanding and skill development.

Ongoing drive for awareness.

Matthew Darby

