



Natural Refrigerants: Solutions for HVAC

ATMOSphere America

San Diego

6 June 2017

Jan Dusek

Business Development Manager APAC, shecco



Natural Refrigerants recommended by MEP/FECO China in majority of targeted HVAC&R segments

- **R290** - Room air conditioner, Heat pump water heater, Stand-alone refrigeration system
- **R600a** - Stand-alone refrigeration system
- **CO₂** - Domestic heat pump water heaters, industrial or commercial heat pump water heaters, Industrial or commercial refrigeration system (refrigerant or secondary refrigerant)
- **NH₃** - Cold storage, condensing unit, industrial refrigeration system



R290 AIR-CONDITIONING, IS IT COMING?



Foreign Economic Cooperation Office / Ministry of Environmental Protection of China (MEP/FECO)

&

China house Household Electrical Appliances Association (CHEAA)

In Cooperation with

United Nations Industrial Development Organization (UNIDO) & United Nations Environment (UNEP)

Organize

International Workshop & Field Trip On
**Designing, Production and Installation with
R-290 in Air-conditioning Industry**

10-12 April 2017, Ningbo- China

R290 AIR-CONDITIONING, IS IT COMING?



R290 AIR-CONDITIONING, IS IT COMING?





- **Godrej Appliances**

- Replaced CFC, HFC and HCFC as early as 2002
- Efficient and green ACs using R290; first in the world
- **India's first ACs with 7-star performance**
- **300,000+ units sold since launch**
- Earliest brand to opt for voluntary energy labelling of its refrigerators





- **Japanese Government (METI) & New Energy Development Organisation (NEDO)**

- 4 companies participating in the research projects to develop technologies for high energy efficiency low-GWP based small and mid-size air-conditioning systems
- DENSO - development of **CO₂ (R744) AC system with high efficiency ejector**
- MITSUBISHI ELECTRIC - development of **HC based room air-conditioning system**

高効率低GWP冷媒を使用した中小型空調機器技術の開発

三菱電機株式会社	自然冷媒を適用したルームエアコンの研究
株式会社デンソー	高効率エジェクタを使用したCO ₂ 冷媒空調システムの開発

HC&NH BASED HEAT PUMPS & WATER CHILLERS



- HC based water chillers introduced by several companies targeting **commercial air-conditioning** and **process cooling applications**
- RSA Cooling - water chiller for outdoor installations, and are available with **cooling capacity from 3,0 to 15,0 kW**
- HC water chillers in Australia, **reliable performance at 110+F** days this summer



R718 WATER CHILLER



WWW.ACCELERATENA.COM

SHECCO USEFUL LINKS



Industry Platforms:

www.hydrocarbons21.com

www.R744.com

www.ammonia21.com

shecco Publications, incl. GUIDEs

<http://publications.shecco.com>

Accelerate Magazines:

www.accelerateEU.com/

www.accelerateNA.com/

www.accelerateAUNZ.com/

www.accelerateJapan.com/

ATMOsphere conferences:

www.ATMO.org

#WebinarWednesday

www.webinarwednesday.net

The Natural Voice

www.thenaturalvoice.org

THANK YOU

