

***Talk on Energy Efficiency using Hydrocarbon as Green Refrigerant Evening***

By Ir. Al-Khairi bin Mohd. Daud

There were 30 participants attending a talk by Ir. Al-Khairi Daud about Energy Efficiency using hydrocarbon as green refrigerant on 10th June 2010. Ir. Al-Khairi started the talk by explaining the history of refrigeration system and the impact of ozone depleting refrigerant such as chlorofluorocarbon (CFC), HCFC and HFC that has created global warming phenomena. With the signing of Montreal Protocols, Malaysia is committed to phase out the gasses by 2013.

As an alternative, Hydrocarbon (HC) refrigerant has been introduced as the 'greener' replacement of ozone depleting refrigerants. HC has several advantages. It is non corrosive, zero depletion to ozone and has better performance that leads to greater efficiency. HC is recognized under Green Building Index (GBI) standard as one of green refrigerant. The biggest advantage is HC is the 'drop-in' replacement to the current HFC refrigerants that requires no modification to the current air conditioning system.

Nevertheless HC has its limitations. HC cannot be used in centrifugal chillers and has lower flammability limit at 470°C. Thus it is important that the area where the refrigerant being used to be properly ventilated and ignition source is controlled especially at occupied areas. Ir. Al-Khairi then shared the assessment methodology and safety requirement before refrigerants replacement. To ensure safety, Ir Al-Khairi reminded that the technicians handling the system have to be trained of the operation and maintenance requirement.

At the end of the talk, Ir Al-Khairi shared the experience and cases of using Hychill hydrocarbon in Malaysia that has yielded a saving ranging from 15% to 47% with return of investment less than a year. The Q&A sessions were lively. The sessions ended by a reminder for engineers to not only drive to save energy but also be responsible for the environment.