Fact Sheet – Crystal Serenity Presentation, 9 November 2016

- official policy – limit global warming to plus 1.5 to 2 degrees C – but just 1 degree increased leads to serious problems....weather

- above plus 2 degrees C – approaches “tipping point” – global warming begins to become self-sustaining

- 2007 lowest ice thickness in the Arctic since 1978

- pattern of late 20th century/early 21st century – marked shrinkage in Arctic ice coverage, with an extreme loss in 2007

- 1980 to 2012 – very fast melt of Arctic ice cap – 15 to 17 per cent

- 2008: multi-year Arctic ice reached 55 per cent of 1970s average with greatest decline from 2008 to 2012

- previously 90 per cent of Arctic ice survived the summer, now below 50 per cent

- Arctic time bomb: 10 to 30,000 years ago vegetation was buried beneath the ice – this ancient carbon will seep from Arctic permafrost under Arctic lakes as the melt progresses – it is estimated to contain about two times the amount of carbon in our entire global atmosphere – as the released organic matter is eaten by insects it is turned into CO2 and methane – if this occurs we will face one hundred times the level of today’s carbon in 90 years – estimate: 1400 petagrams – 1 petagram is 1 billion tonnes

- if global warming reaches plus 4 degrees C, sea levels will rise 1 to 2 meters, swamping densely populated coastal areas and drowning some island nations.....most of the major cities of the world would have to be re-located

- 2014 and 2015 had the hottest average global temperature since records began – joined by El Nino it resulted in torrential rains, heavy snow falls, floods, and recurring Super Storms

- in the last 100 years the average global temperature increased by 0.5 degrees C and ocean levels rose by 15 to 20 cm

- by 2100 ocean levels will rise between 15 and 95 cm, most projections suggest 50 cm is the most probably rise – heavily populated coastal regions and most of the world’s major cities are at risk, requiring massive relocations of populations - if Greenland melts in the distant future, ocean levels will rise an estimated 7 meters

Suggested readings: