• 2012 Russia started first offshore oil drilling and first Arctic ice-resistant oil rig
• Many believe we should focus on alternative energy
• October 2013 UK aims to be a hub for Arctic oil
• Canada plans to open an army training centre at Resolute Bay and a deep water port on Baffin Island
• In 2007, it announced plans to build a fleet of patrol boats to guard the Northwest passage which has not opened as a result of increased ice melt
• In 2008, Russian ice breakers patrolled the Arctic for months and Russian aircraft flew over the North Pole simulating strikes on bases and shipping
• After joining forces to research the seabed, Denmark and Canada claimed that in August 2008, that the Lomonosov Ridge is actually connected to North America and Greenland, instead of Russia
• Russia, Canada, the USA, Norway and Denmark signed an agreement that they would abide by the UN Law of Sea Convention
• A UN panel will decide about control of Arctic by 2020

**Environmental Costs, ANWR**

• The largest onshore oil reserve in North America is ANWR
• The refuge has 45 species of land and marine mammals, from the pygmy shrew to the bowhead whale
• Caribou are important as the Gwich’in tribe rely on them for subsistence hunting (40% of their diet) and they would be displaced to areas where there are more open to oil
• Some birds are highly sensitive to human disturbance, for example snow geese are disturbed by helicopters up to 4 miles away
• In can take up to 60 years for Arctic vegetation to recover from oil contamination
• At Prudhoe Bay there are 60 waste sites that leak acids, pesticides and diesel

**Technological Advancements**

• In 1977 America realised they need to balance demand for energy with their rapidly shrinking resources as the oil and gas they relied on for 75% of their energy was running out.
• Oil and natural gas fields were actually very vast with many in North America, Russia, Saudi Arabia, South America, Africa and the Arctic. Harvard University predicted a 20% increase in global oil production by 2020 due to a technological revolution
• Technology has found a way to get at oil that’s mixed with sand and clay, known as tar sand. The largest deposits are in Canada which produces 1.9 million barrels a day. Al Gore said it was “the dirtiest source of liquid fuel you can imagine”.
• The invention of horizontal drilling means there is no chance of drilling a dry well; in 2011 oil companies had a 99% success rate. In the east-coast of Russia, they drilled the longest extended reach well, plunging 8 miles into the Earth, bigger than Mt. Everest.
• In the past 10 years, Shell has developed a technology called mono-diameter where steel casing is dropped in another, allowing the drilling of much deeper wells.
• “Seismic vessels” trail between 10 and 20 cables, up to 9 miles long searching sonically for oil and gas deposits. They are the largest man made moving objects on earth, the biggest is equivalent to 830 football pitches. Sound waves bounce off underwater rock and map reservoirs to identify whether they have oil, gas or not. These can cost up to £160 million. Exploration and drilling cost £800 billion in 2012.