



International
Association
of Oil & Gas
Producers

Air Transport Safety and Challenges

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Today's Agenda

- What is the IOGP?
- Macro View – Oil and Gas Supply and Demand
- IOGP Air Transport – The Safety Challenge
- Aviation Sub-Committee – The Response
- Other Challenges
- 2038 – A Crystal Ball View.....
- Q&A

About IOGP

Wherever you are...

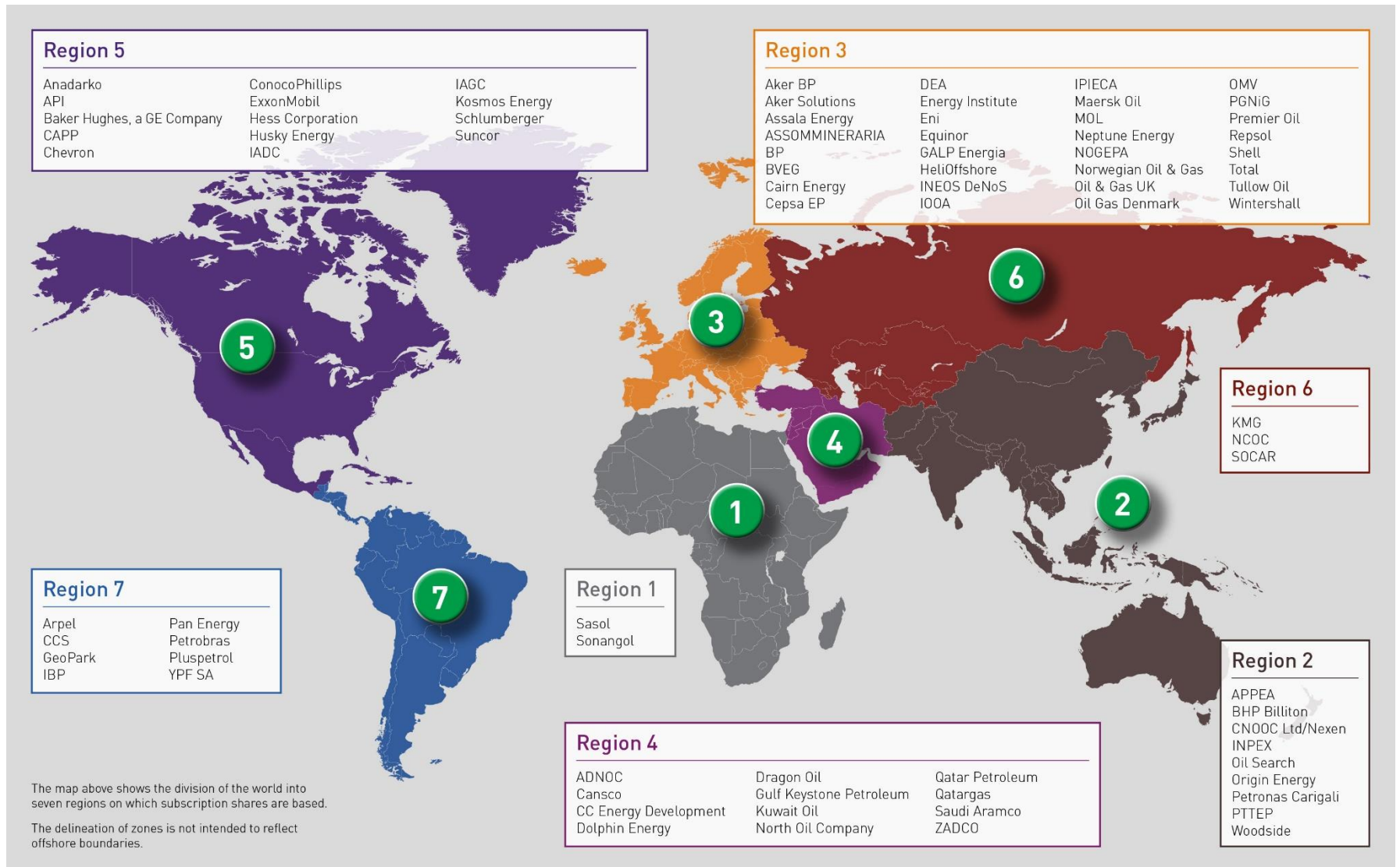
Wherever you go...

Whatever you do...

chances are you're
relying on oil and gas
for heat, light, power
and mobility

IOGP's Members
produce 40% of
the world's oil
and gas - safely,
efficiently
and reliably

80 Members around the world

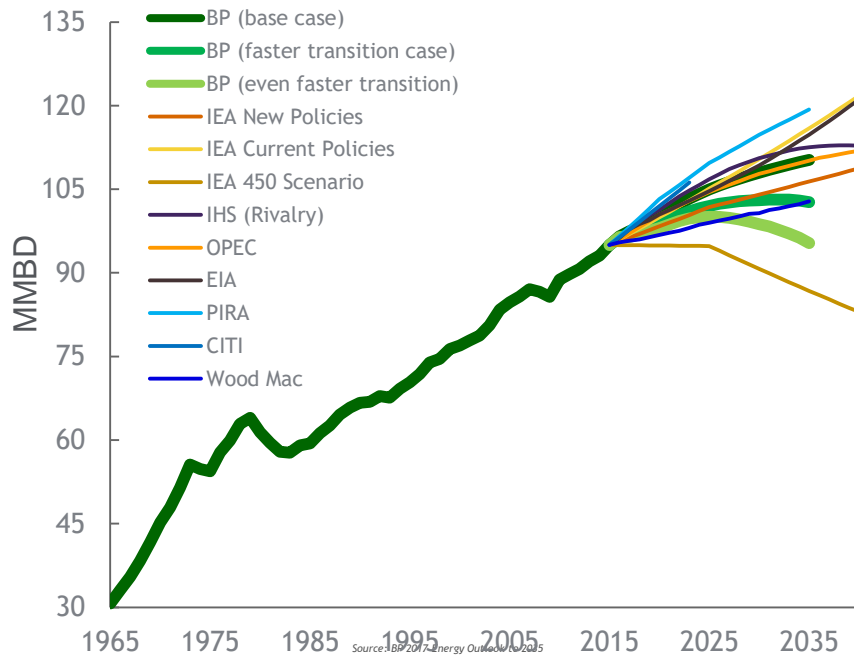


The map above shows the division of the world into seven regions on which subscription shares are based.
The delineation of zones is not intended to reflect offshore boundaries.

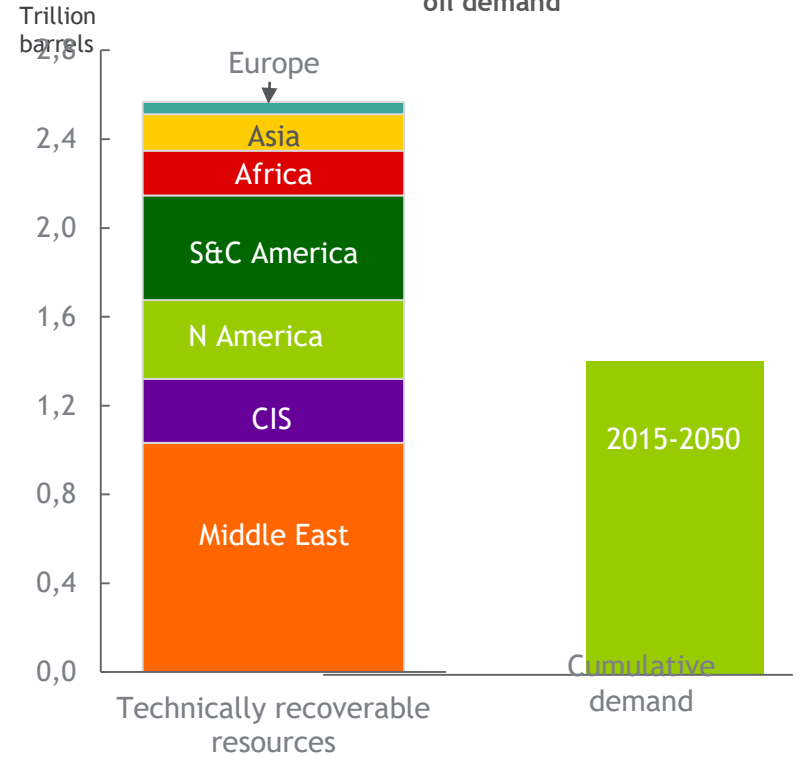
Map shows locations of Member Head Offices. Many operate globally

Our industry is here to stay...

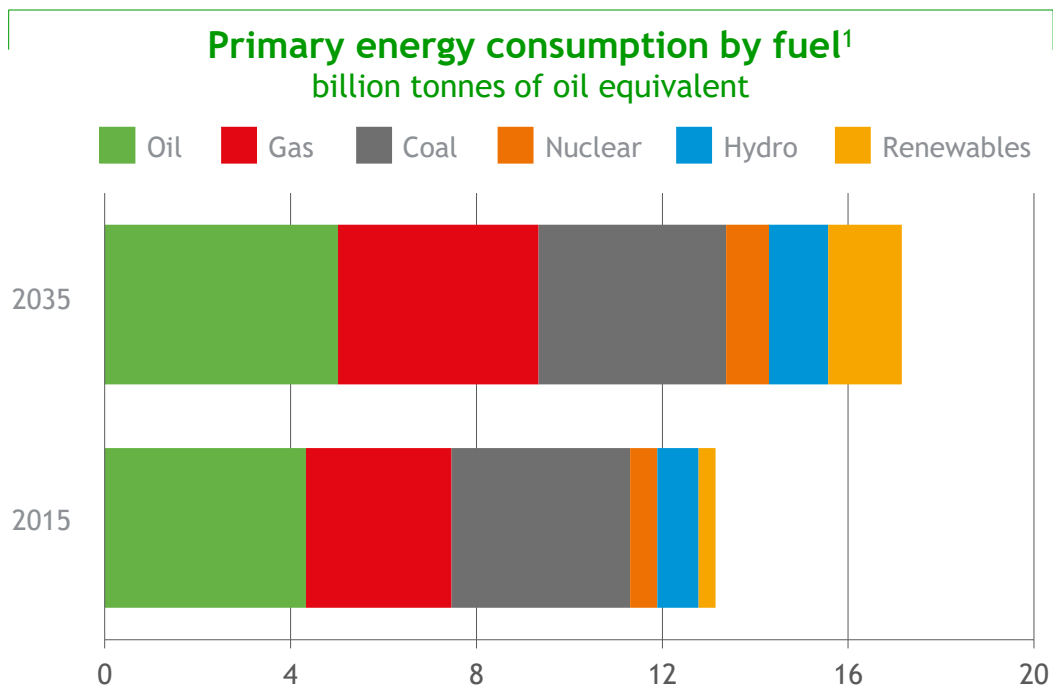
Global oil demand projections



Estimates of technically recoverable resources and cumulative oil demand



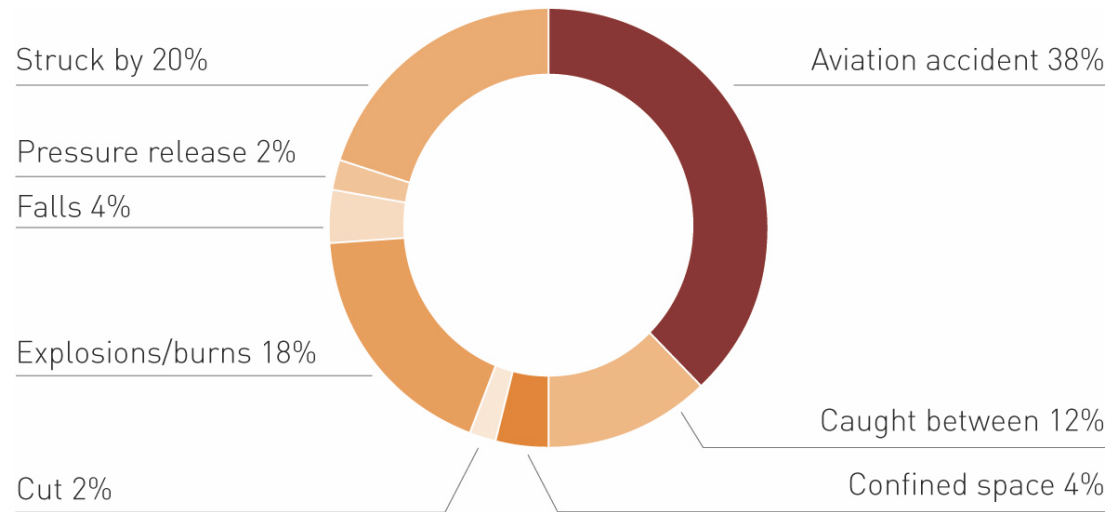
And competition will be fierce...



The challenge: IOGP air transport risk

Largest proportion of the fatalities reported in 2016 were the result of aviation accidents

- 19 fatalities in 2 other incidents



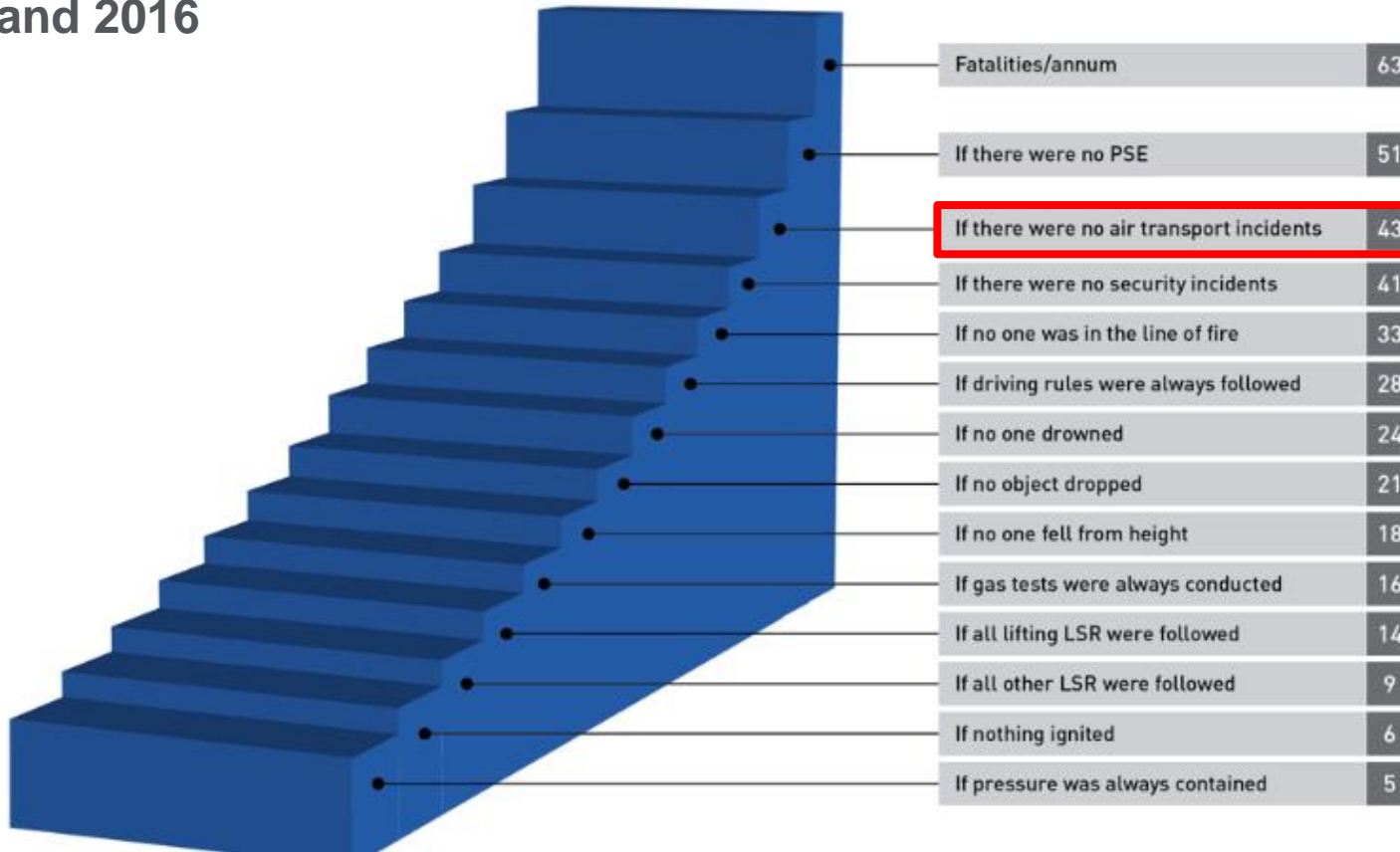
Percentage of fatalities by incident category (2016)

Figure 5 from 'IOGP Safety Performance Indicators - 2016 data'

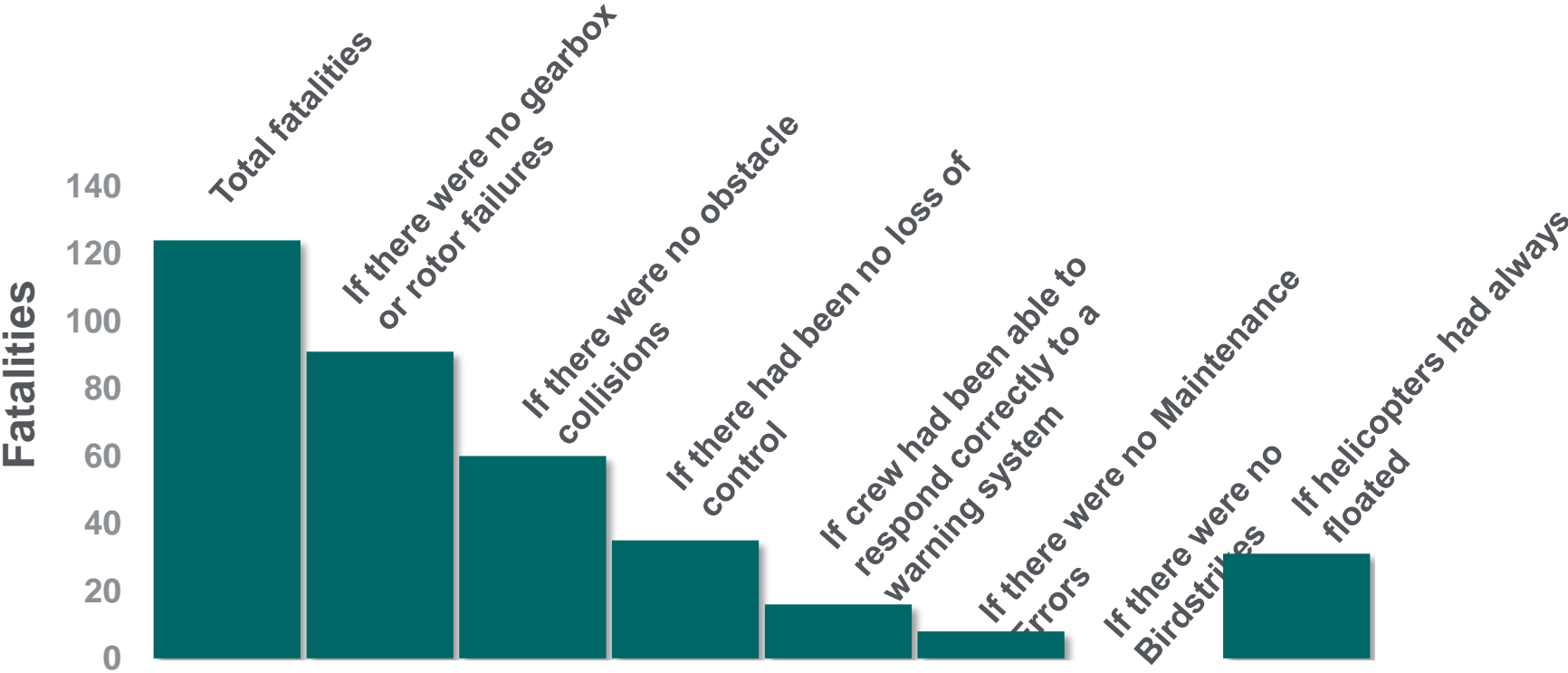
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We need to work together...

IOGP Safety Staircase – Average Fatalities between 2012 and 2016



The Aviation Safety Staircase (2006-2016)



ASC Safety Focus Areas

1. Robust aircraft design / system reliability

- System Failure early diagnosis, reliability, operational impact (HeliOffshore work stream)
- Longer-term strategies and actions to improve single-point failure in rotorcraft, in-service achievement of certification standard by research and advocacy for regulatory improvements (ASC, industry, HeliOffshore, IOGP)

2. Assured flight path

- Aircraft Upset, Flight Path Management, CFIT/W (HeliOffshore work streams)
- Effective design, use of automation, etc. (HeliOffshore work stream and IOGP)
- HTAWS (HeliOffshore work stream, IOGP)

3. Effective human and organisational performance

- Safety systems, culture and safety leadership in O&G aviation organisations (IOGP programmes)
- O&G company-contractor interface management to enhance safety performance (IOGP programmes)

4. Targeted technical solutions

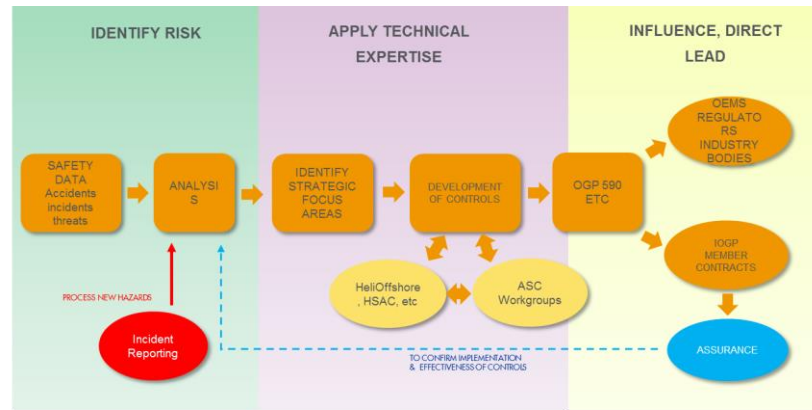
- Active participation in specific HeliOffshore and IOGP work streams

5. Industry standardisation and compliance

- Development of a true industry standard for offshore helicopter operations. (Joint and IOGP HeliOffshore work stream)
- Comparison of agreed standards, IOGP registration of R590 differences

ASC strategic approach

“Flying on duty offshore should be at least as safe as flying on the average global commercial airline”



IOGP HAS SPECIFIC “LEVERS” TO INFLUENCE FRONTLINE SAFETY PERFORMANCE

- Ultimate air transport customer (**funding**) → “partner in safety” with contractors
- Ultimate **risk owner** → discretion to use air transport, or not!
- R590 AMG **compliance** is at the direction of the IOGP companies → far too variable
 - drive toward R590 AMG/industry common **standards, specifications and practices**
- Fund focussed **R&D efforts**, e.g. on total system reliability in rotorcraft (enhanced technology)
- Uniquely placed to deliver programmes driving **safety leadership** concepts into air transport contractors (and incentivise)

Other Challenges

- **Operating/Contracting Models Need to Change**
 - O&G companies sharing resources (aircraft)
 - Matching supply & demand (buying a service)
- **Enhanced Aircraft Reliability**
 - Safety needs to improve
 - Reliability needs to improve (no contingent aircraft)
- **O&G Companies are Changing**
 - Reducing asset manning requirements
 - Capital constraints (portfolio rationalizations)
 - Looking for ways to enhance operating efficiencies
 - Willingness to change when it makes sense

2038 – A Crystal Ball View.....

- **Autonomous aircraft operations are prevalent**
 - Travelling public becomes comfortable with all forms of autonomously operated modes of transport
 - Human error rates are reducing
 - Economics continues to drive further technological development
- **Enhanced Aircraft reliability**
 - Aircraft design – no single point failure (enhanced redundancy)
 - Supply of aircraft matches demand (minimal spare aircraft)
- **Artificial Intelligence drives safety and efficiencies**
 - Aircraft monitors its own health (move to data driven maintenance)
 - Data driven flight operations enhances safety and efficiencies

Questions?