



AQUAMARINE
POWER



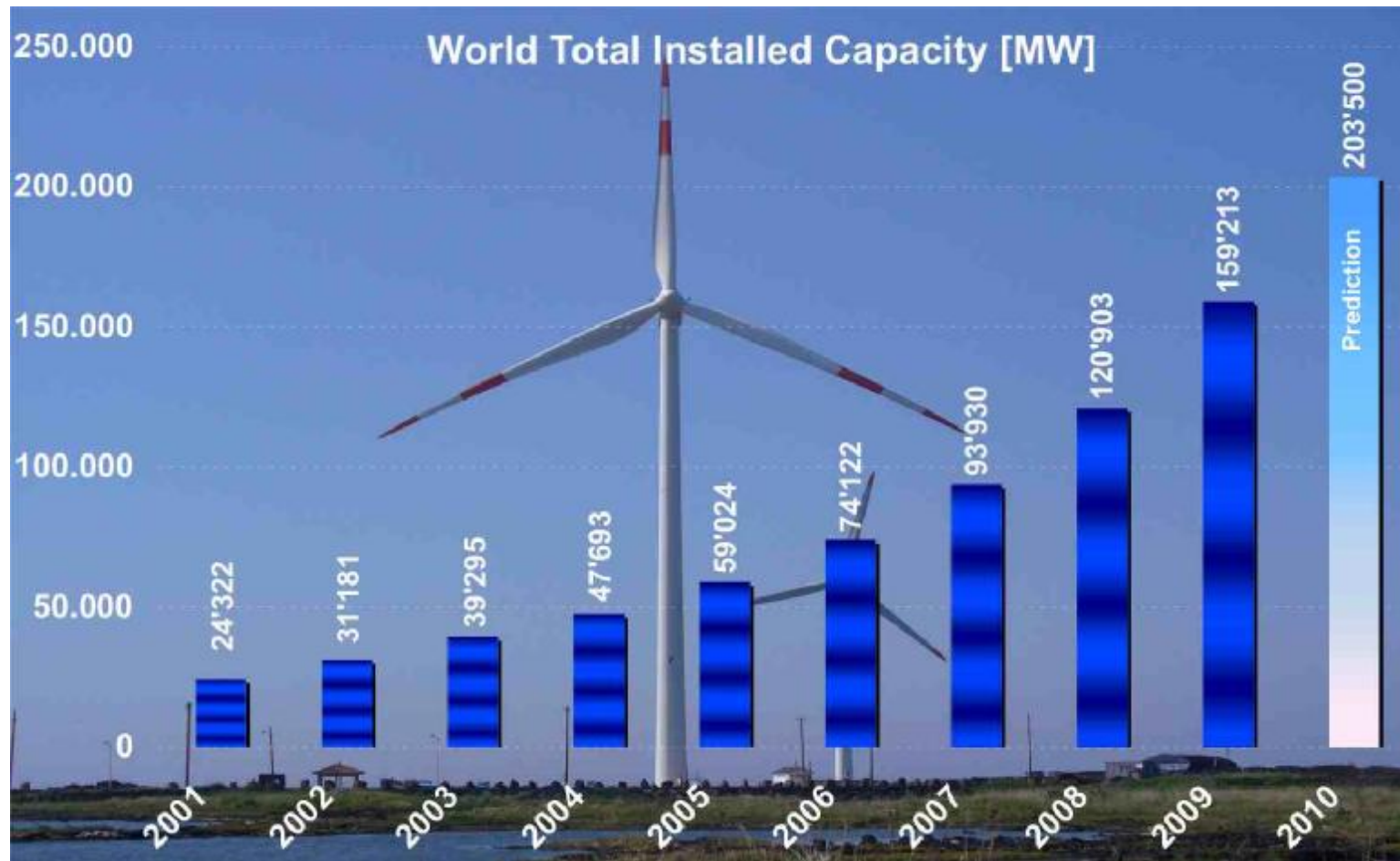
THE RENEWABLE ENERGY TIMESCALE AND IP

MERVYN JONES, CHAIRMAN, AQUAMARINE POWER

THE CHALLENGE

- **Addressing climate change**
 - Global desire to reduce greenhouse gas emission by 50% by 2050
 - Scottish desire to reduce greenhouse gas emission by 80% by 2050
- **Security of supply & global tensions**
- **Historical rates of development**
 - Wind 27GW/a (2008) versus requirement of c. 71GW/a (IEA)
 - PV 3GW/a (2008) versus requirement of c. 10GW/a (IEA)
 - New technologies have historically taken 20+ years to achieve scale
 - Rise in patents for renewable technologies have preceded rise in installation by 6-8 years

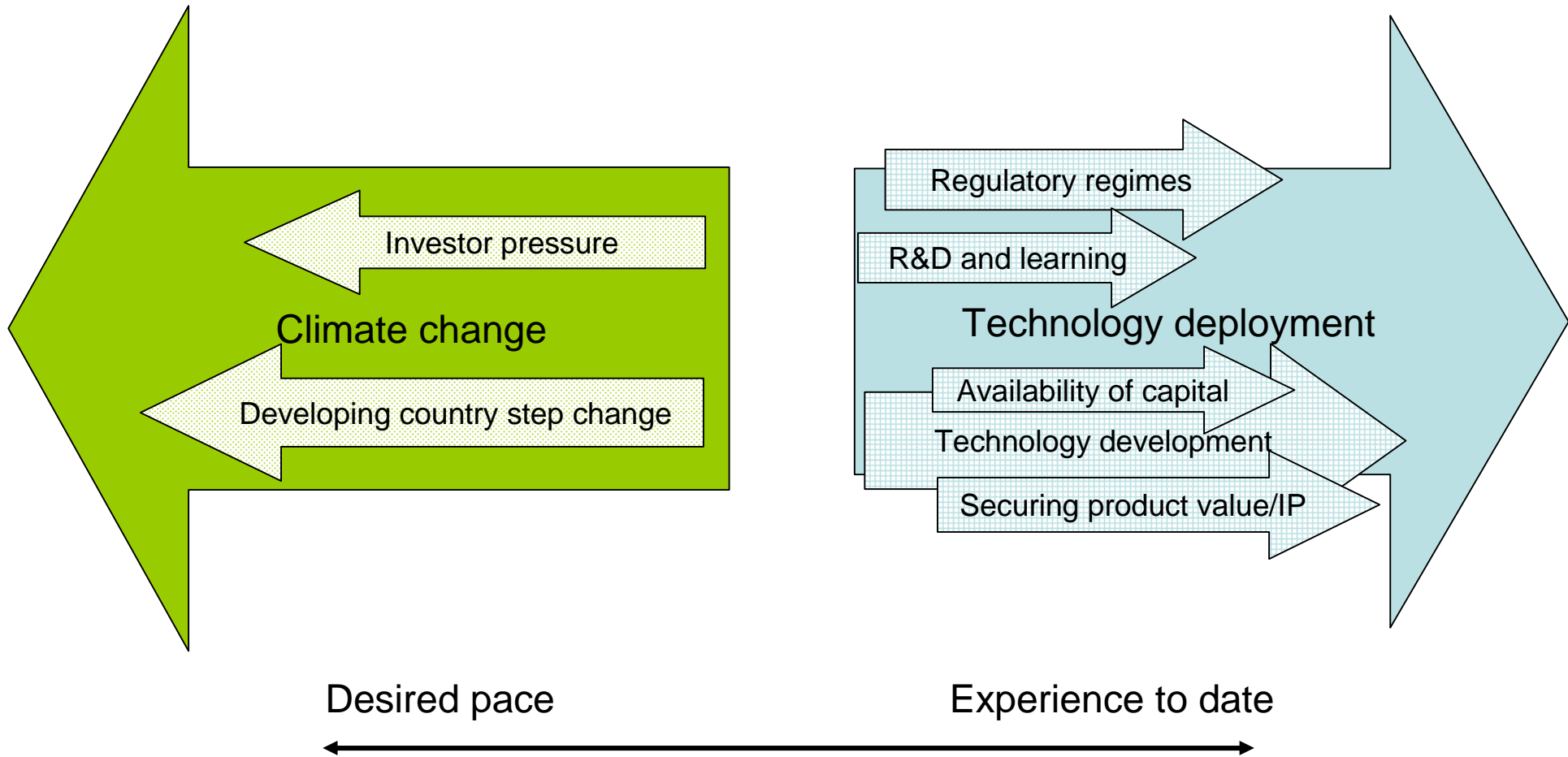
GROWTH OF WIND POWER



Wind energy increased 31% globally from 120.5 GW in 2008 to almost 157.9 GW in 2009.

([Source](#))

THE DELIVERY TENSIONS



NATURE OF IP IN RENEWABLE ENERGY

- **Scope is very wide and complex**
 - Hydro, biomass, biofuel, CS, PV, GSHP, wave, wind, tidal, CCS etc
 - Different ages of maturity
 - Wind patents > mobile phone patents - incl. sub-sectors with >1000
 - Wave and tidal few hundred patents
 - Capture, distribution, materials, control systems, installation etc
 - Transfer from other sectors, issues of obviousness, uniqueness
- **No clear IP models or structures**
 - Not clear what the competition is
 - Sector, other renewable energy or with timescale of climate change?
 - Few industry standards or global alignments
 - Unlike health (TRIPS)
 - Different sector ages create different drivers (core activity/efficiency)
 - Intellectual assets of delivery are as important (e.g. wind farm developers)

THE CHALLENGE FOR IP

- **Confidence for innovation**
 - Strong IP law
 - Clarity of what is patentable
- **Pace to achieve a renewable energy Moores Law**
 - Appropriate coding taking into account the complexity of the industry
 - International alignment
 - Faster implementation
- **Dissemination through collaboration**
 - Vary from sector to sector and sub-sector to sub-sector
 - Pooling opportunities driven by sector
 - Open source (maybe) for the appropriate systems
 - Valuing intellectual assets

*Who Owns Our Low Carbon Future? Intellectual Property and Energy Technologies.
(Chatham House 2009)*



AQUAMARINE
POWER

MAKING MARINE RENEWABLE ENERGY MAINSTREAM

inspire

Innovation

We value and reward innovation.
When people tell us it cannot be
done we ask why not!

INTEGRITY NURTURE SAFETY PARTNERSHIP INNOVATION RESPECT ENTHUSIASM



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