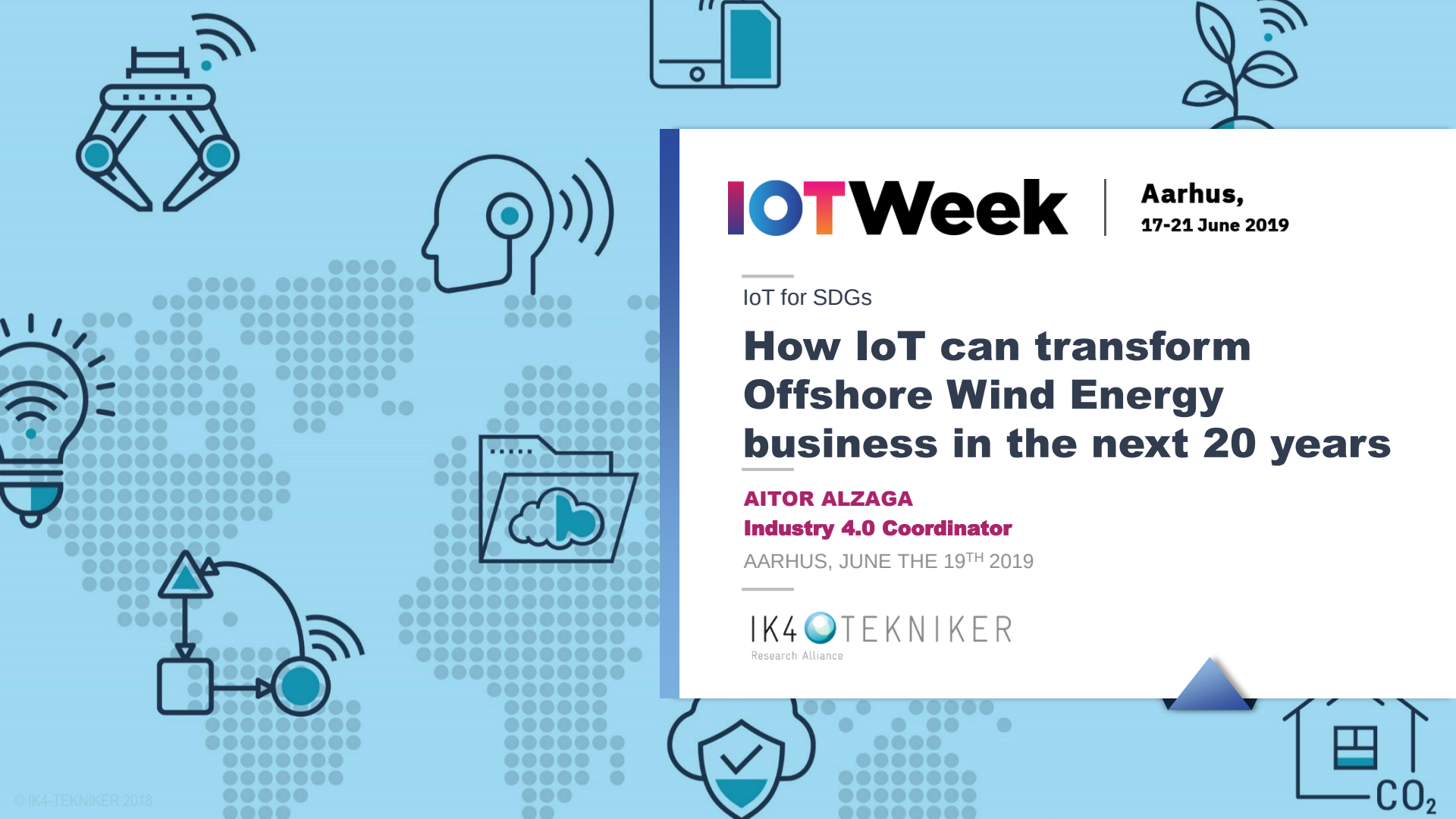




IoTWeek

Aarhus,
17-21 June 2019

IoT for SDGs

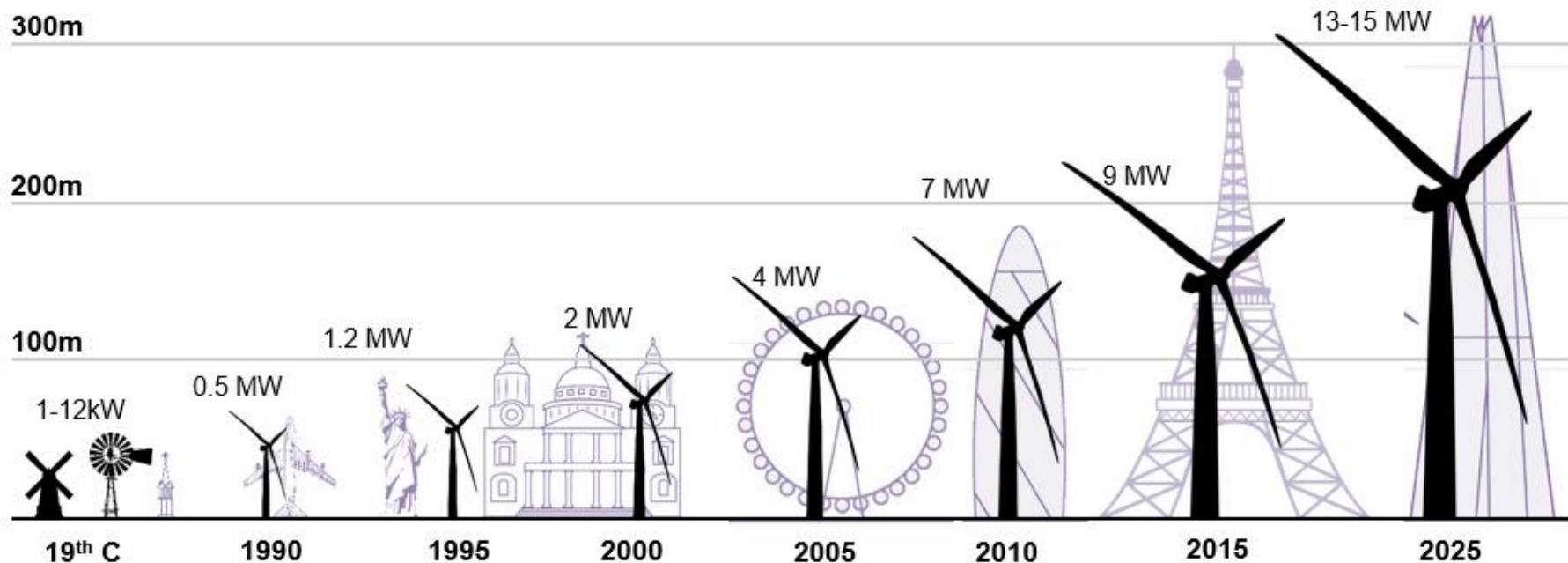
How IoT can transform Offshore Wind Energy business in the next 20 years

AITOR ALZAGA
Industry 4.0 Coordinator

AARHUS, JUNE THE 19TH 2019

IK4  TEKNIKER
Research Alliance

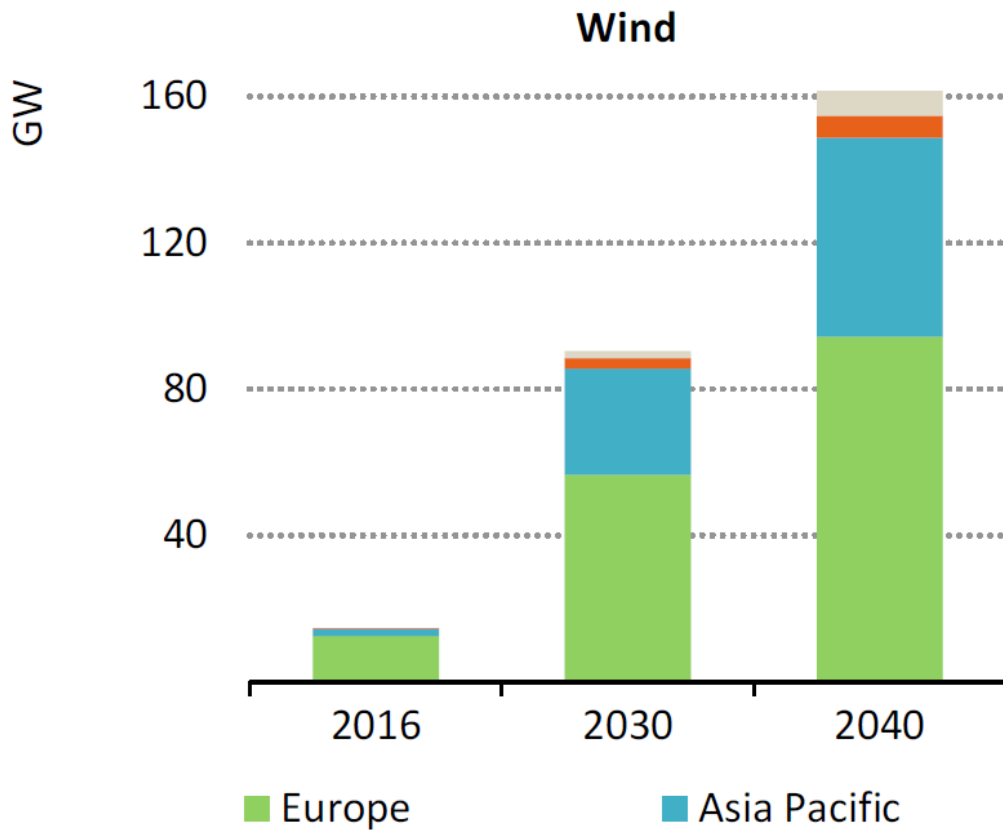
Evolution of wind turbine heights and output



Sources: Various; Bloomberg New Energy Finance

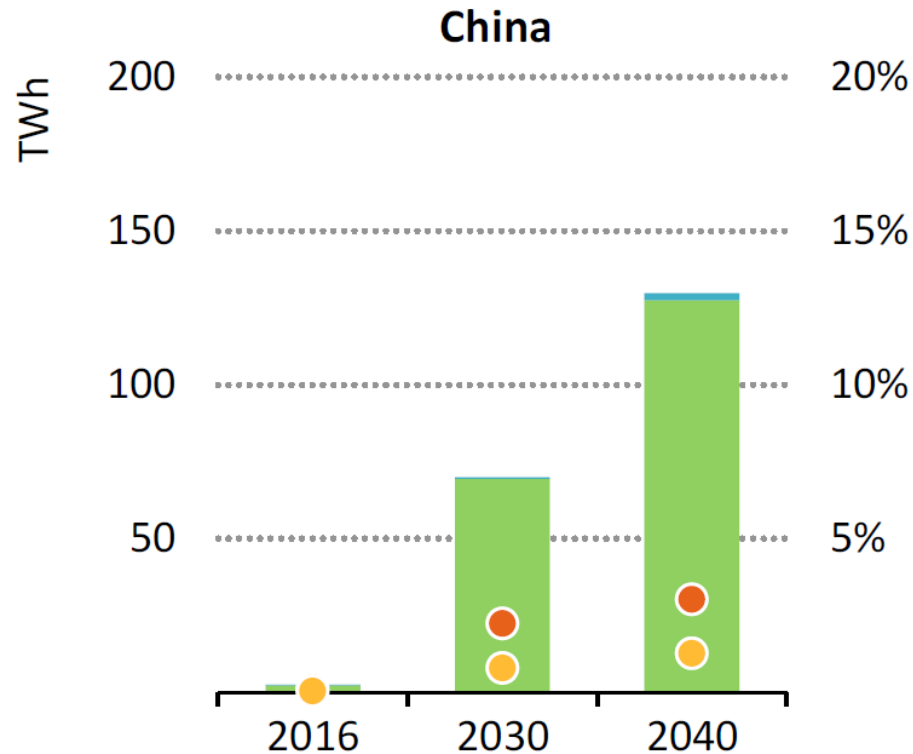
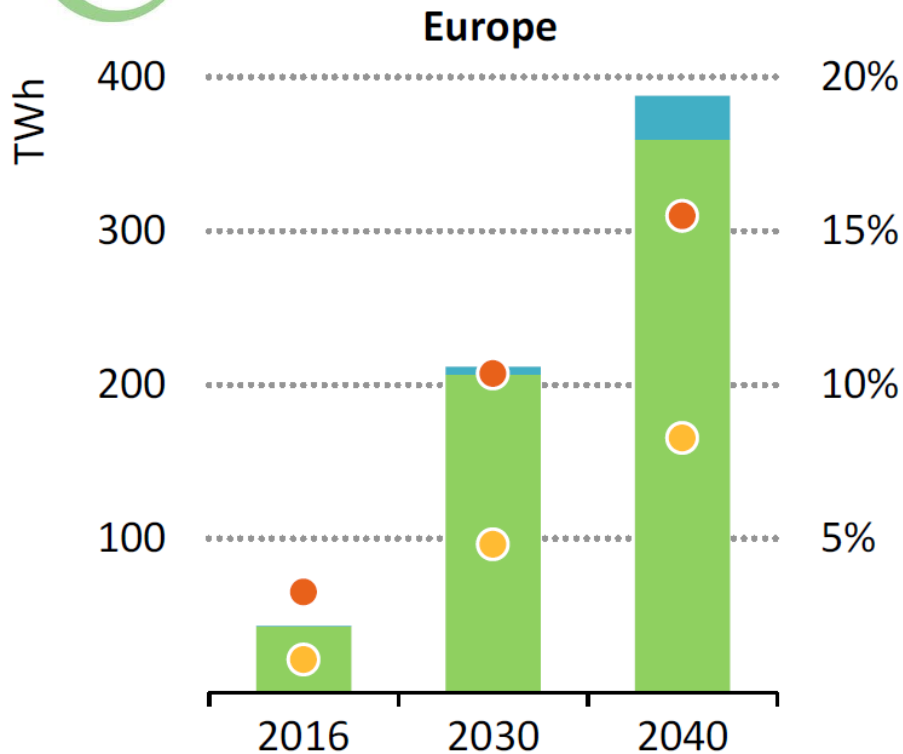


PROJECTED INSTALLED OFFSHORE CAPACITY





PROJECTED OFFSHORE ELECTRICITY GENERATION



Wind

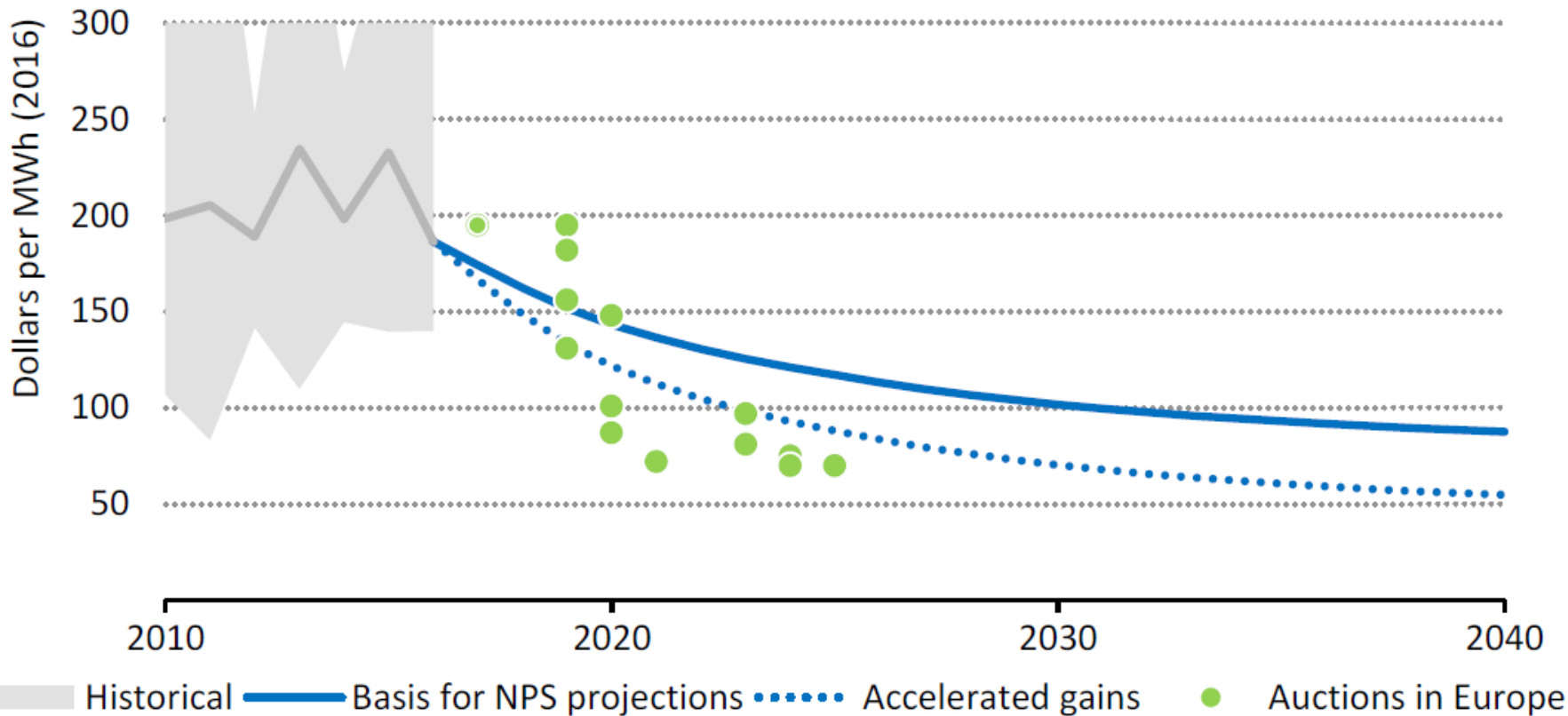
Marine

Share of renewables (right axis)

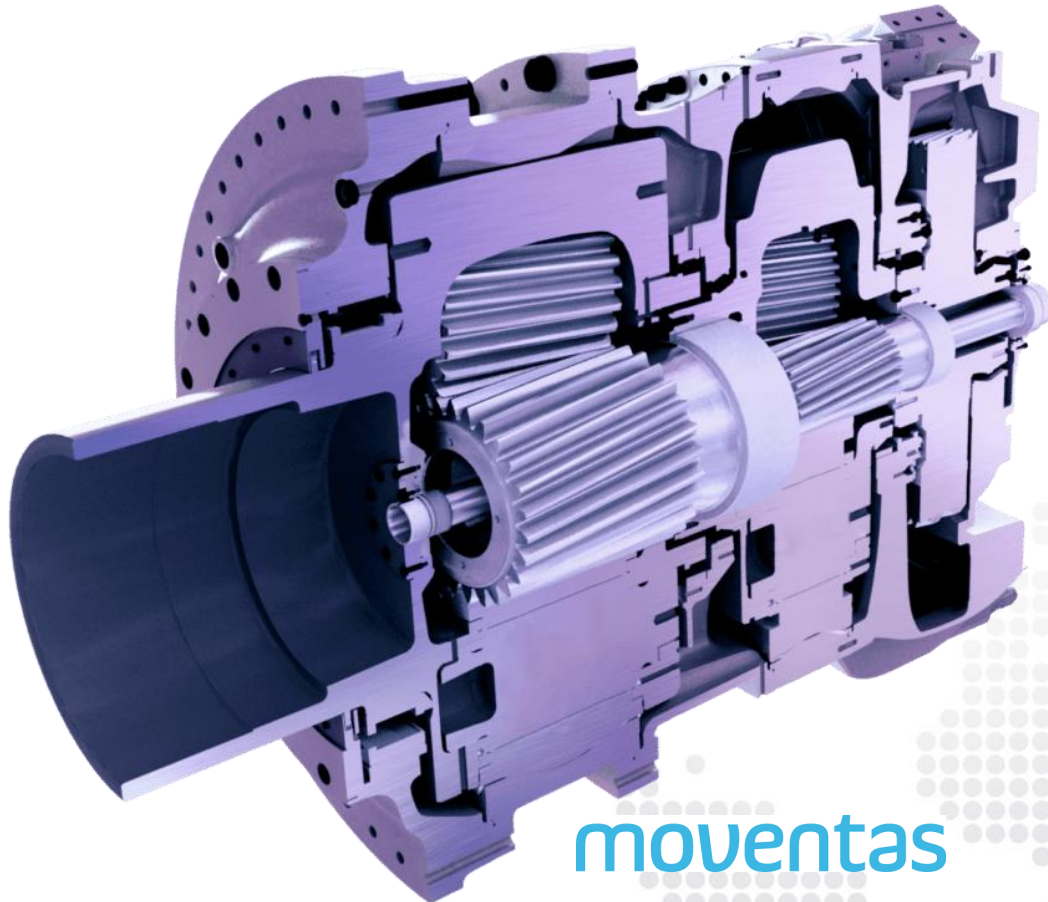
Share of total (right axis)



PROJECTED GLOBAL AVERAGE LCOE OF OFFSHORE WIND



HOW TO REDUCE DRAMATICALLY THE OPERATION&MAINTENANCE COSTS

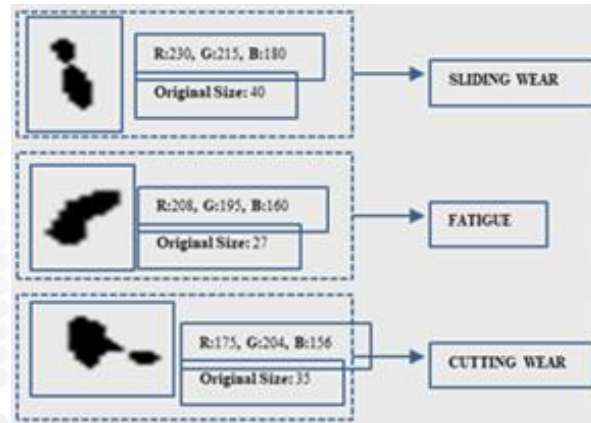
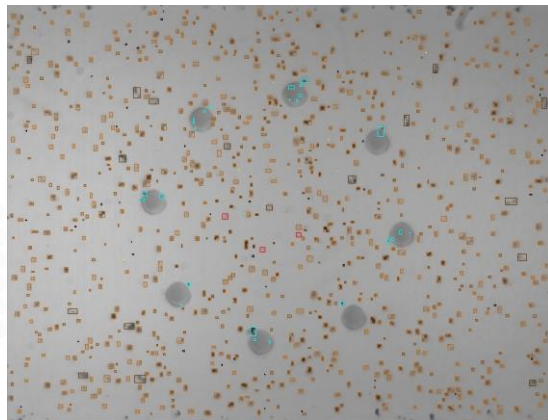


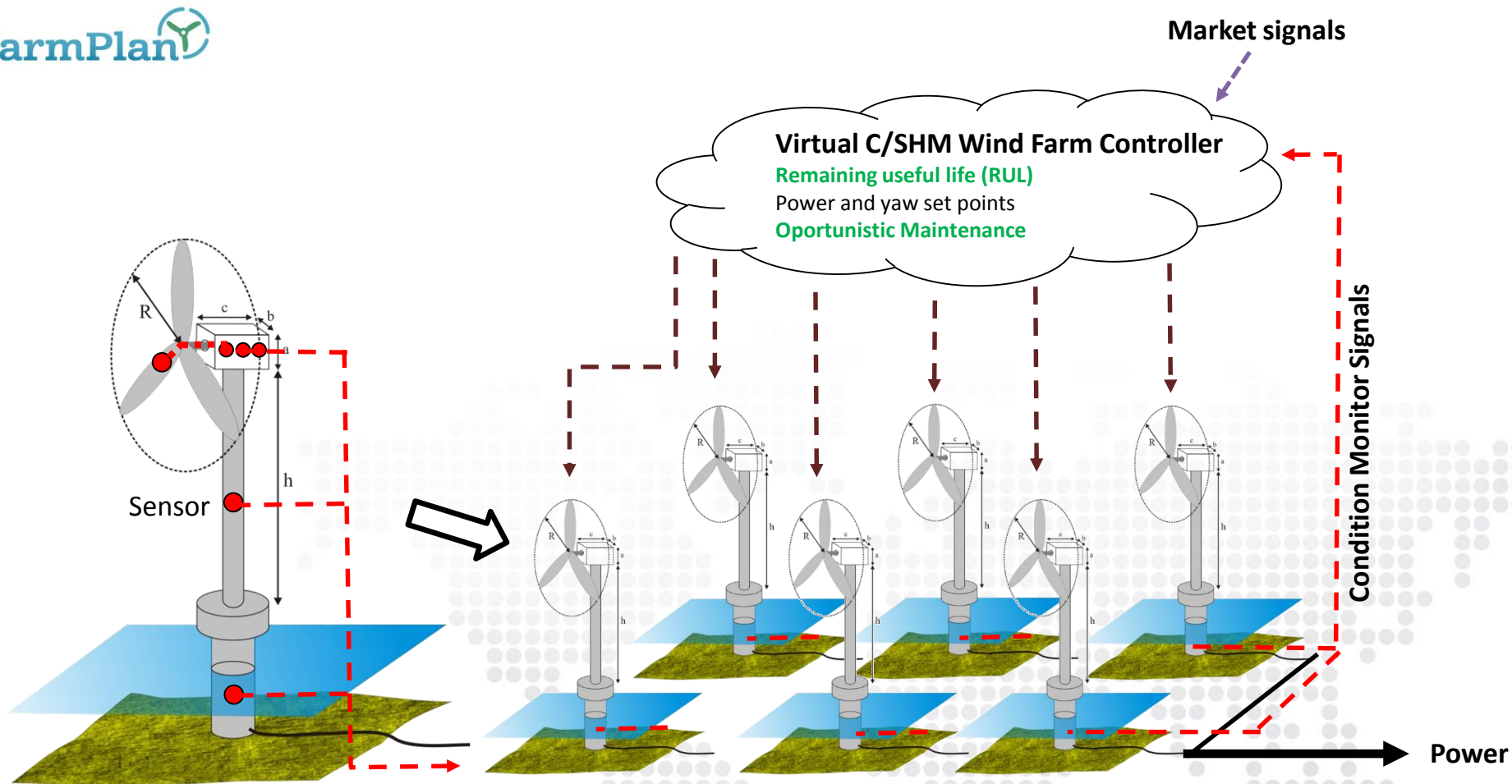
GEARBOX COST
250K€

TOTAL COST
TO REPLACE IT
1.000 K€

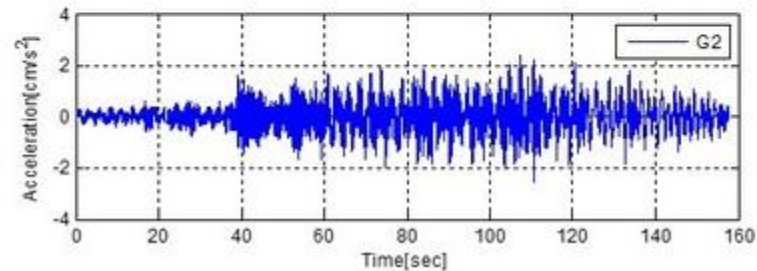
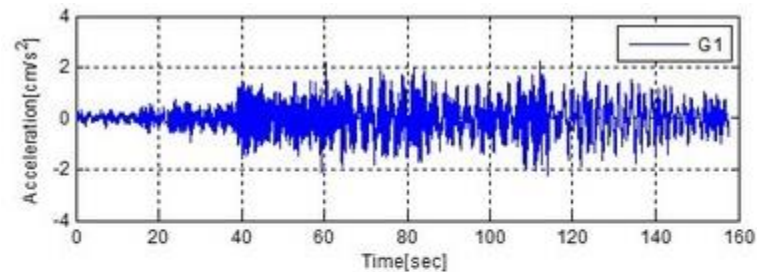
moventas

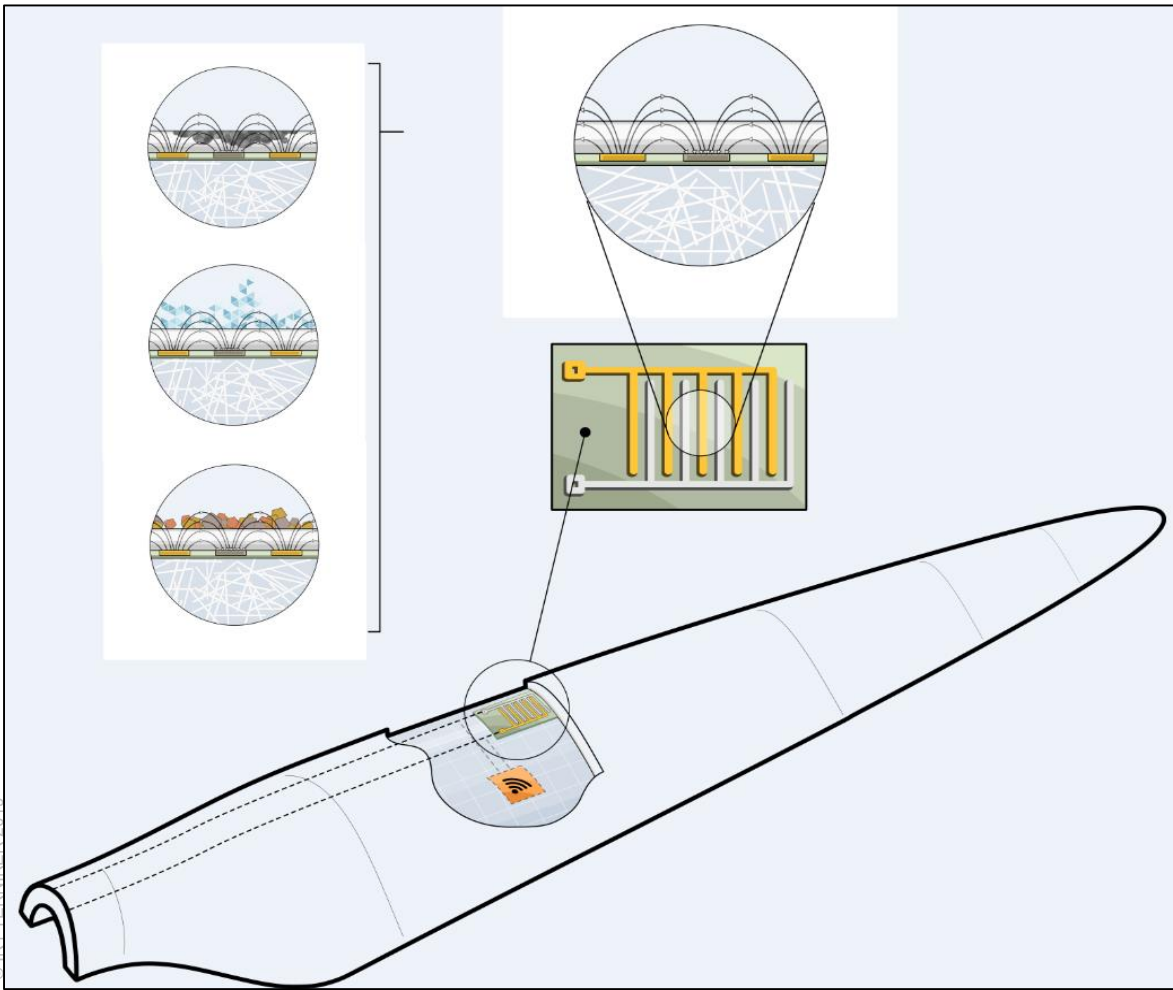
ONLINE LUBRICANT OIL CONDITION MONITORING



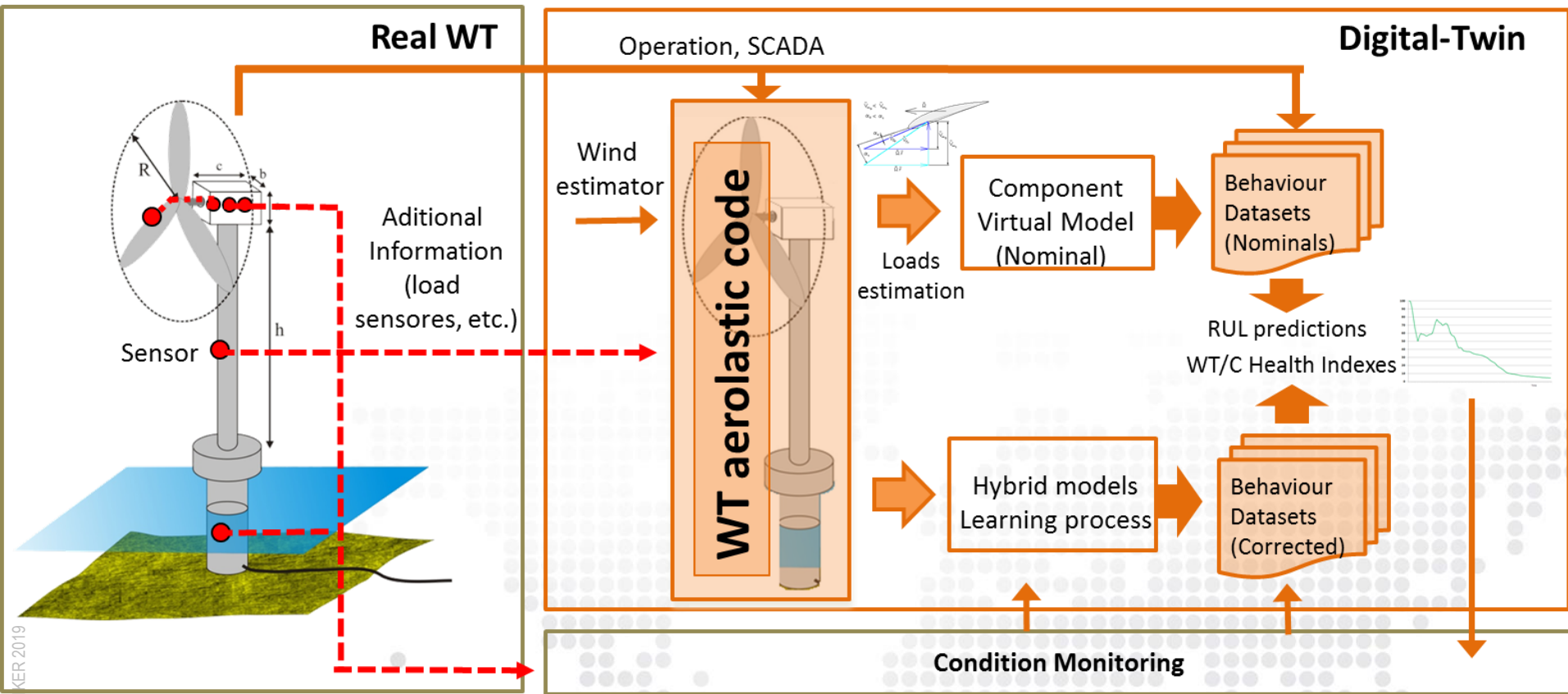


STRUCTURAL HEALTH MONITORING





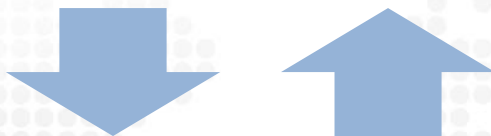
ULTRATHIN IMPEDIMETRIC SENSOR



SENSORS - IoT



DATA INTERPRETATION



DIGITAL TWIN



IK4  TEKNIKER
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