EXCEEDENCE
MAKING RENEWABLES COMMERCIAL

Case Study 1 – Arklow Tidal Energy

Farm Technology	Tidal Energy
Farm Size	170 MW
Currency	Pounds Sterling
Operating Duration	15 Years
Location and Year	Arklow 2014
Device	Siemens MCT 1200kW
Energy Calculations	Adjust Farm size to 174MW Results: Device Capacity Factor 36.08% Farm Annual Energy Production 549895 MWh
Capex	'Total CAPEX per farm' £2,600,000/MW
Opex	'Total OPEX per farm' 10% of Capex per year
Revenue Rates	Revenue-Basic Inputs – FIT Included £180/MWh ROC Equivalent Included – Variable 'Input per Annum' – starting at £50/MWh in Yr1, increasing my £1/MWh each year to £64/MWh in year 15
Real Discount Rate	'Apply Cash Flow in Real Terms' 6%

RESULTS

Net Present Value (NPV) £	£368,231,991
Levelised Cost of Electricity (LCOE) £/MWh	£166.98/MWh
Internal Rate of Return %	16.65%

Sensitivity – Goal Seek

Goal seek Capex level that is required for an IRR of 20%

A Capex value of £410,733,032.23 should be returned