

Transmission Access Planning and Wind Farm Commissioning

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Transmission Access Planning





Transmission Access Planning

Role and Interactions with Customer up to Commissioning



Offer Issue



- **Study**
- System Voltage
- System Circuit loadings
- System Short Circuit
- Generator performance

- **Offer includes**
- ***Connection Arrangement***
- ***Associations (Firm and Short Circuit)***



Prior to Connection



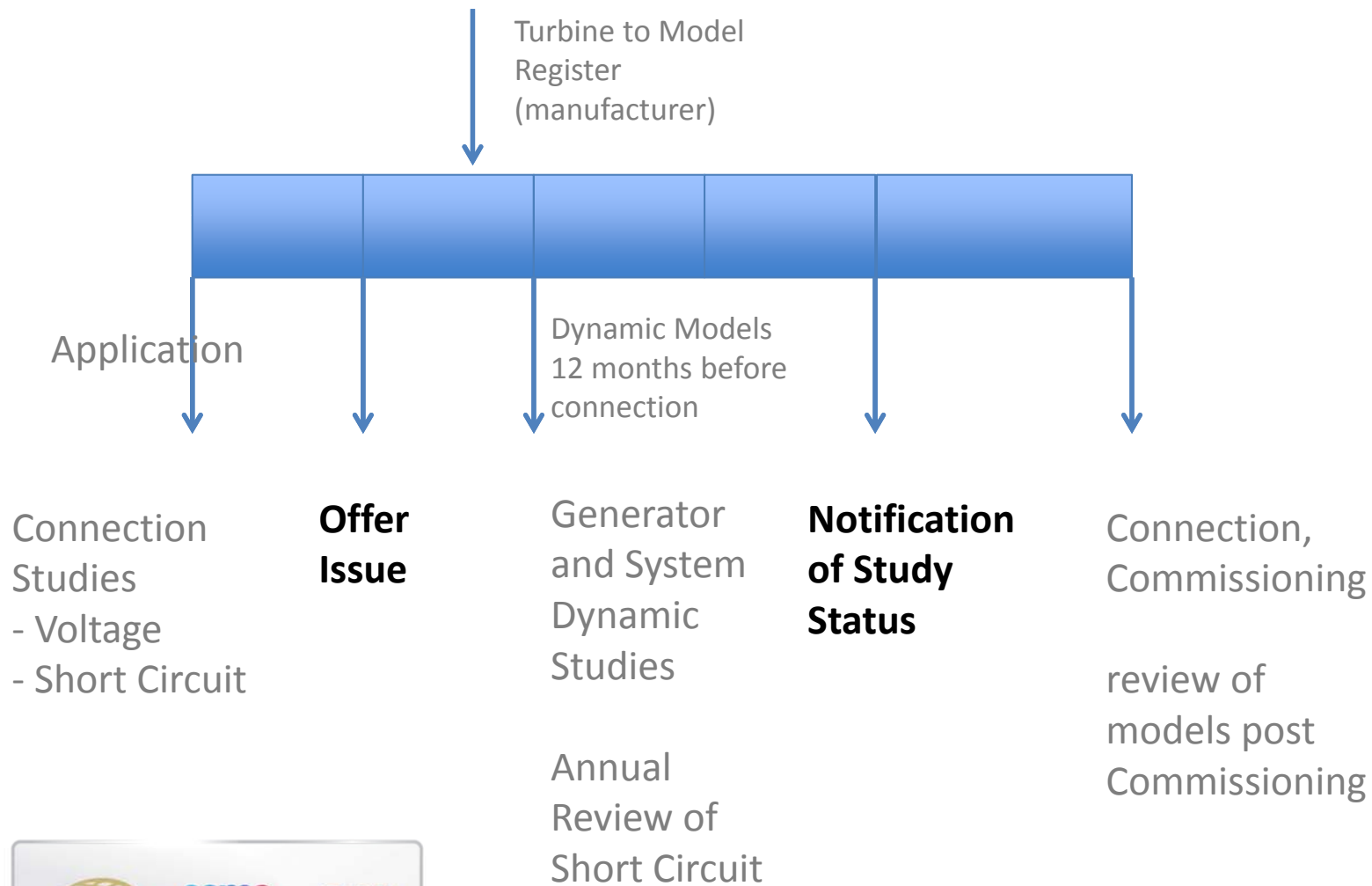
- Study
- System Short Circuit (Review)
- System Dynamic Performance
- Generator performance

- Discussions with Developers (if necessary)

- ***Notification of Study Status***



Timelines



Notification of Study Status




- Official EirGrid Notification that
- Short Circuit is acceptable
- Dynamic Performance is acceptable

- Will be included with Op-Cert



Notification of Study Status



Notification of EirGrid Study Status			
		Transmission Access Planning Grid Development and Commercial	
FACILITY NAME:	SAMPLE (1) WIND FARM		
TYPE:	WIND FARM	110 KV NODE	SAMPLE
TSO / DSO & CODE:	DSO: SAMPLE	INSTALLED / MEC	SAMPLE MW
ASSUMED ENERGISATION DATE:	OCTOBER 2012	GATE	GATE 2
GENERATOR DETAILS:	x3 Enercon E82 2.3MW ExF2 v2.0		
CONNECTION METHOD:	The windfarm shall be connected at 38kV to a 110kV station in the country ...		
PRE-CONNECTION STUDY STATUS:	SHORT CIRCUIT ANALYSIS <i>Has EirGrid reviewed Transmission System fault levels and acknowledged that this connection is OK to proceed from a short circuit perspective? (For further information see page 2)</i>		YES
	DYNAMIC ANALYSIS <i>Has EirGrid assessed this connection using the proposed dynamic models and associated data as provided by the developer in relation to the voltage and transient stability of the Transmission System? (For further information see page 2)</i>		YES
EIRGRID APPROVAL TO ENERGISE:	SHORT CIRCUIT AND DYNAMIC STUDY COMPLETE – NO ISSUES		





Study Examples



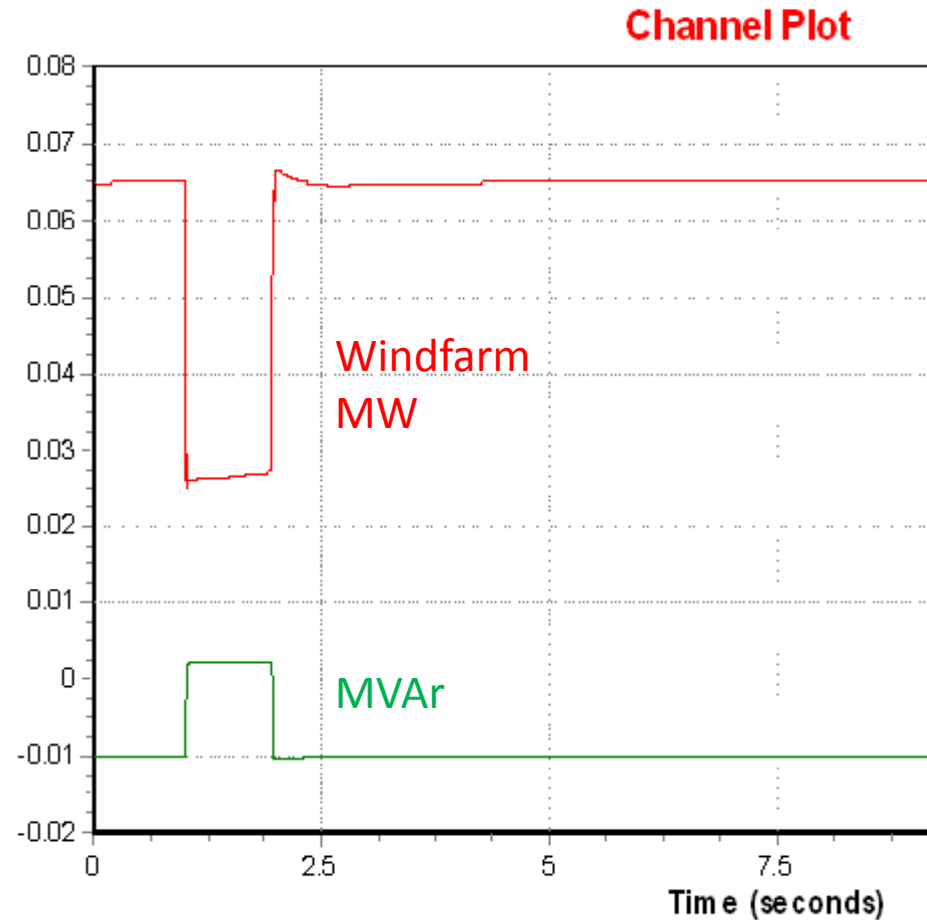
Generator Fault Ride Through



EXAMPLE :

SIMULATION OF REAL
AND REACTIVE POWER
DURING AND AFTER A
FAULT

PASS



Generator Fault Ride Through

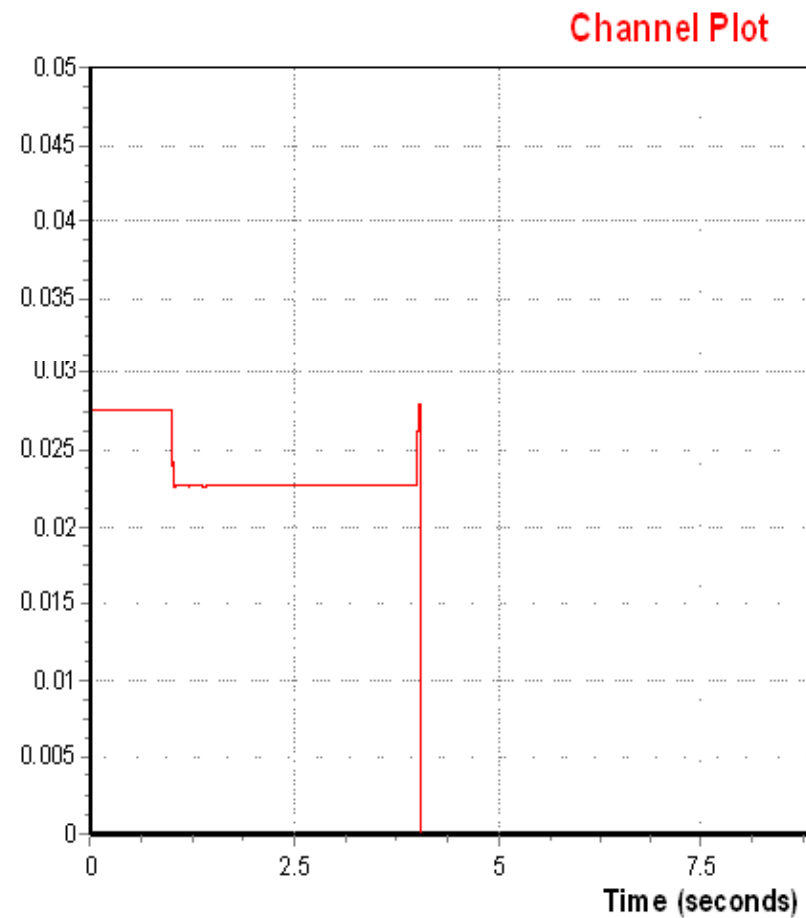


EXAMPLE 2:

IN SIMULATION -
GENERATOR FAILS TO
SURVIVE A FAULT

SHOULD IT HAVE? DISCUSS
WITH DEVELOPER

FAIL





Issues / Initiatives



Future Issues / Initiatives



- Expect to engage with industry to explore
- Performance at low short circuit levels
 - Some simulations show more frequent windfarm trips
- Fault Ride Through with transient dips
 - Some simulations show transients which temporarily dip to zero during the fault
 - May not be acceptable at very high wind penetrations (discuss)
- Electronic Application form
 - to improve information management during the process between application and up to commissioning



TRANSMISSION ACCESS PLANNING

Technical choices are a balance ...



**KEEP ONE
CUSTOMER
HAPPY**

**KEEP ALL
CUSTOMERS
HAPPY**



