



Main Aspects of Lebanon's Wind Power Purchase Agreements

Overview of the 1st Round and Perspectives on the Second

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Presentation Outline

- I. **Timeline and Background on the 1st Round** ◀
- II. **Main Aspects of the 1st Wind Power Purchase Agreement** ◀

I. Timeline and Background on the 1st Round



*Source: UNDP - CEDRO
(Modified)*

Preparation

Call for Expressions of Interest (EOI) launched in September 2012

Request for Proposals (RFP) issued in March 2013

Ministerial Committee (MEW, EDL, LCEC) + International Consultant 1

4 offers received in June 2013

Inter-Ministerial Committee (MEW, MoF, MoE, MoJ, PCM, EDL, LCEC) + International Consultant 2 + International Consultant 3 + RCREEE

3 Offers were qualified (All in Akkar area). Proposed capacities: 62.1 MW, 62.1 MW & 82.5 MW

Evaluation

Preliminary approval by the Council of Ministers in July 2017

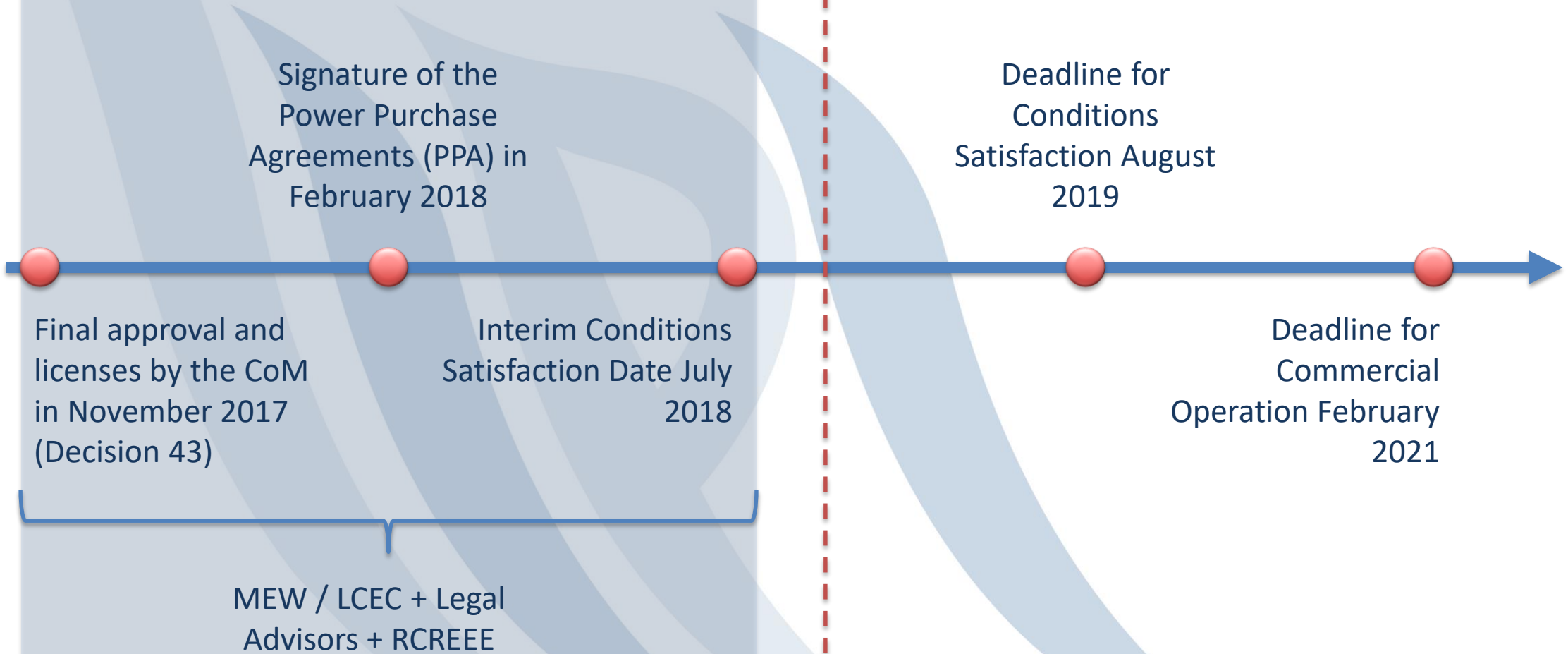
Negotiation (Technical and Financial)

MEW / LCEC + International Consultant 3 + RCREEE

Final approval and licenses by the CoM in November 2017 (Decision 43)

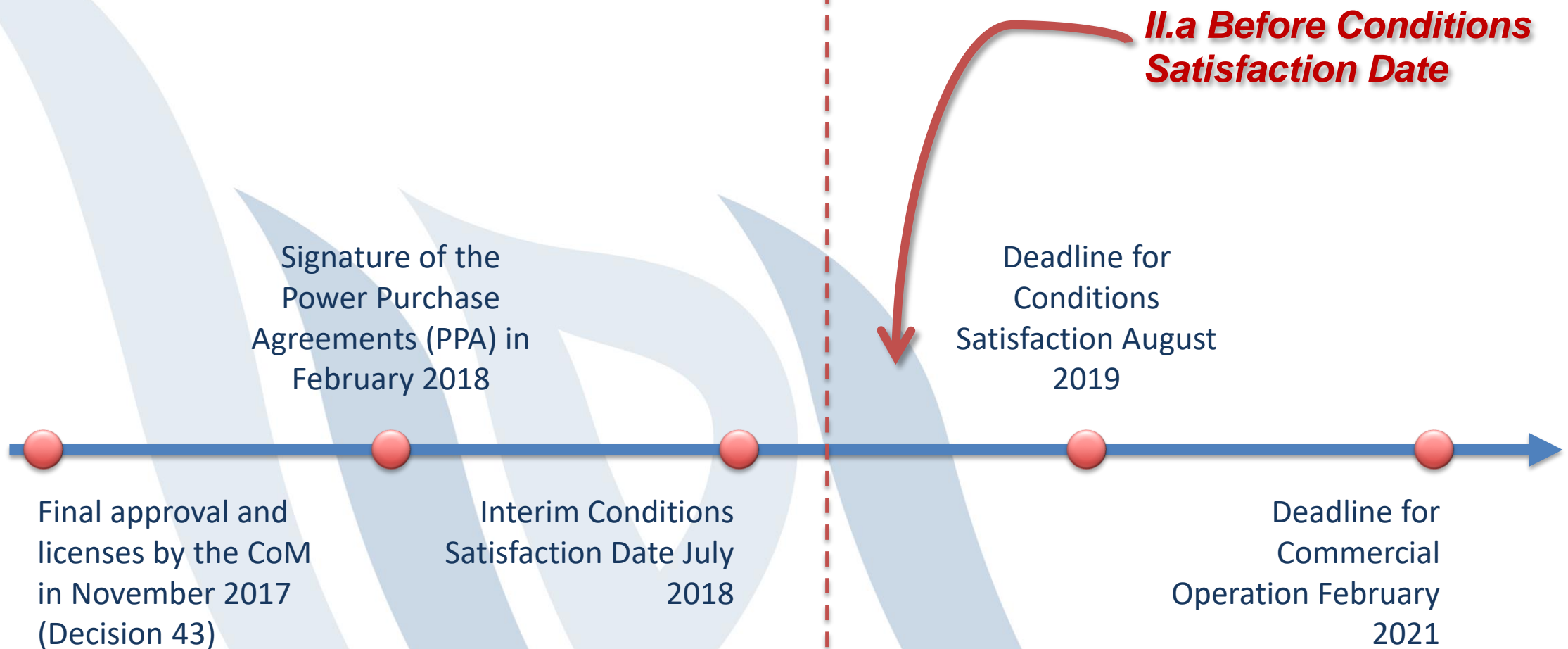


Negotiation (Legal and Fiancial)





II. Main Aspects of the 1st Wind Power Purchase Agreement



II.a Before Conditions Satisfaction

Date

- Final independent energy yield assessment including wind measurements according to MEASNET standards for a minimum of six (6) months
- Final site layout and coordinates for each wind turbine generator
- Final and Complete Grid Capacity Study and Network Connection Study
- Network Connection Requirements by EDL

II.a Before Conditions Satisfaction

Date

Guaranteed Facility Power Curve of the selected wind turbine generators

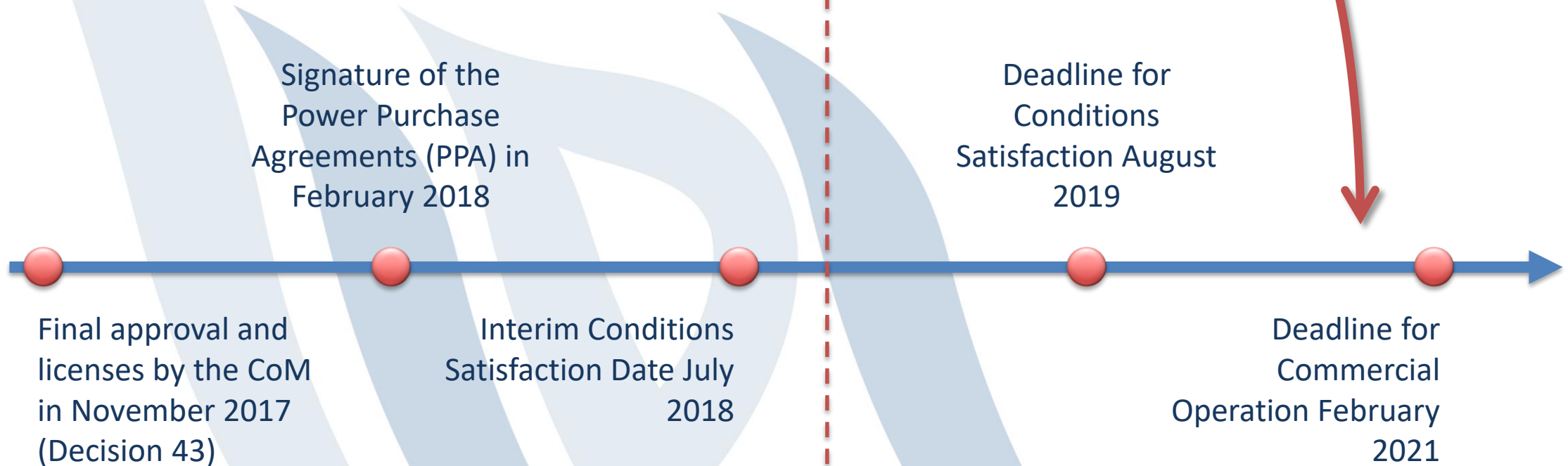
Implementation Schedule and Project Program

Decommissioning plan

Environmental and Social Impact Assessment (approved by MoE)

Bird Migration Protocol

II.b Before Commercial Operation Date



II.b Before Commercial Operation Date

Construction of the Facility and CLIENT's Assets ◀

**Factory Acceptance Tests, Cold Commissioning Testing and
Start-up and Operational Testing** ◀

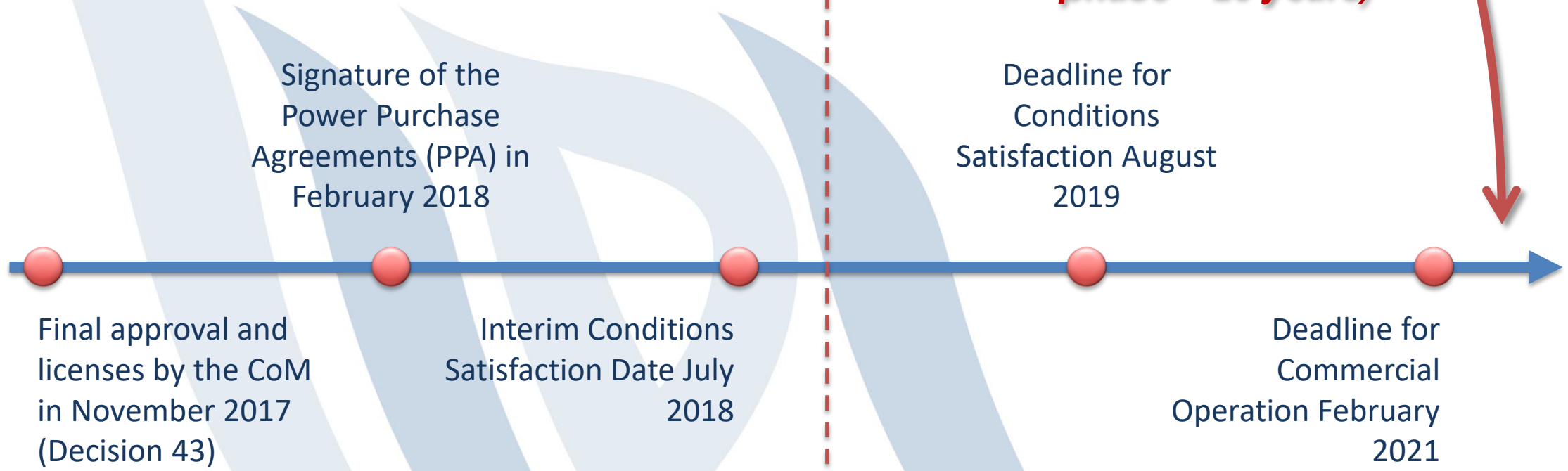
**Reliability Test Run for each Wind Turbine Generator (*normal
operation for a cumulative period of 168 hours + exported power for
at least 72 hours without Interruption*)** ◀

II.b Before Commercial Operation Date

Facility Reliability Test (*Facility operates as a whole continuously for a period of 240 hours without Interruption of the Facility, in which time the Facility has exported power for an aggregate period of at least 120 hours and operated at 70% of its installed capacity for at least 5 hours.*)

Initial Charge Rate (ICR) = 0.5 x Charge Rate (CR)

**II.c After Commercial
Operation Date
(commercial operation
phase – 20 years)**



II.c After Commercial Operation Date

Operation of the Facility ◀

Performance Test (*within 9 months after COD, to verify the Guaranteed Power Curve for the Wind Turbine Generators, output above or equal to 95% of that of the Guaranteed Power Curve, at least 2 Wind Turbine Generators*) ◀

Guaranteed Power Curve can be updated once at the end of the 1st year, and once at the end of the 3rd year ◀

Tolerance limit for underperformance is 8% in the 1st year, 6% in the 2nd and 3rd years, 4% in the rest of the Term ◀

II.c After Commercial Operation Date

Damage Rate (DR, for underperformance) = 0.5 x CR ◀

Delay Costs = 78% x Total Electricity Deemed to be Delivered x CR ◀
- Initial Electricity Payment

Excess Charge Rate = 0.5 x CR ◀

Deemed Delivered Electricity Payment = (PF x Total Electricity Deemed to be Delivered x CR) – Delivered Electricity Payment ◀

PF = 0.9 in the 1st 9 months, and for the rest of the Term PF = actual electricity output /guaranteed electricity output for the last 12 months ◀

Close Proximity (1.5 km upwind of the Facility and 0.5 km in other directions) ◀



Final Thought

The Alternative Energy Revolution

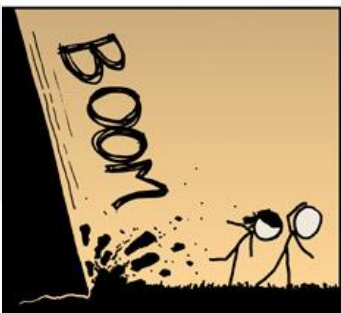


I'M ALL FOR GREEN ENERGY, BUT THOSE TURBINES CREEP ME OUT. THEY REMIND ME OF WAR OF THE WORLDS, OR THE TRIPOD BOOKS.

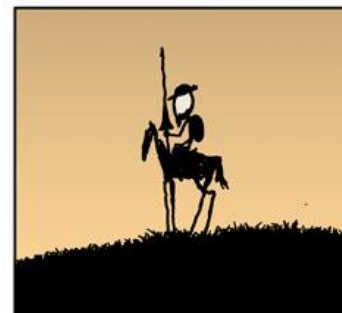
THEY ARE UNNERVING. I CAN'T SHAKE THE FEELING THAT AT ANY MOMENT THEY'LL —
(RUMBLE)



OH NO. IT'S COMING THIS WAY!
AL GORE, YOU'VE DOOMED US ALL. RUN!



WHAT NOW? BUT WHO COULD —
SOMEONE HAS TO STOP THEM. STAND ASIDE!





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efficient resources, sustainable achievements

Thank You!

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