Ashalim Plot A Project
Construction of 121 MW Thermo Solar Power Plan in the Negev

September 2016

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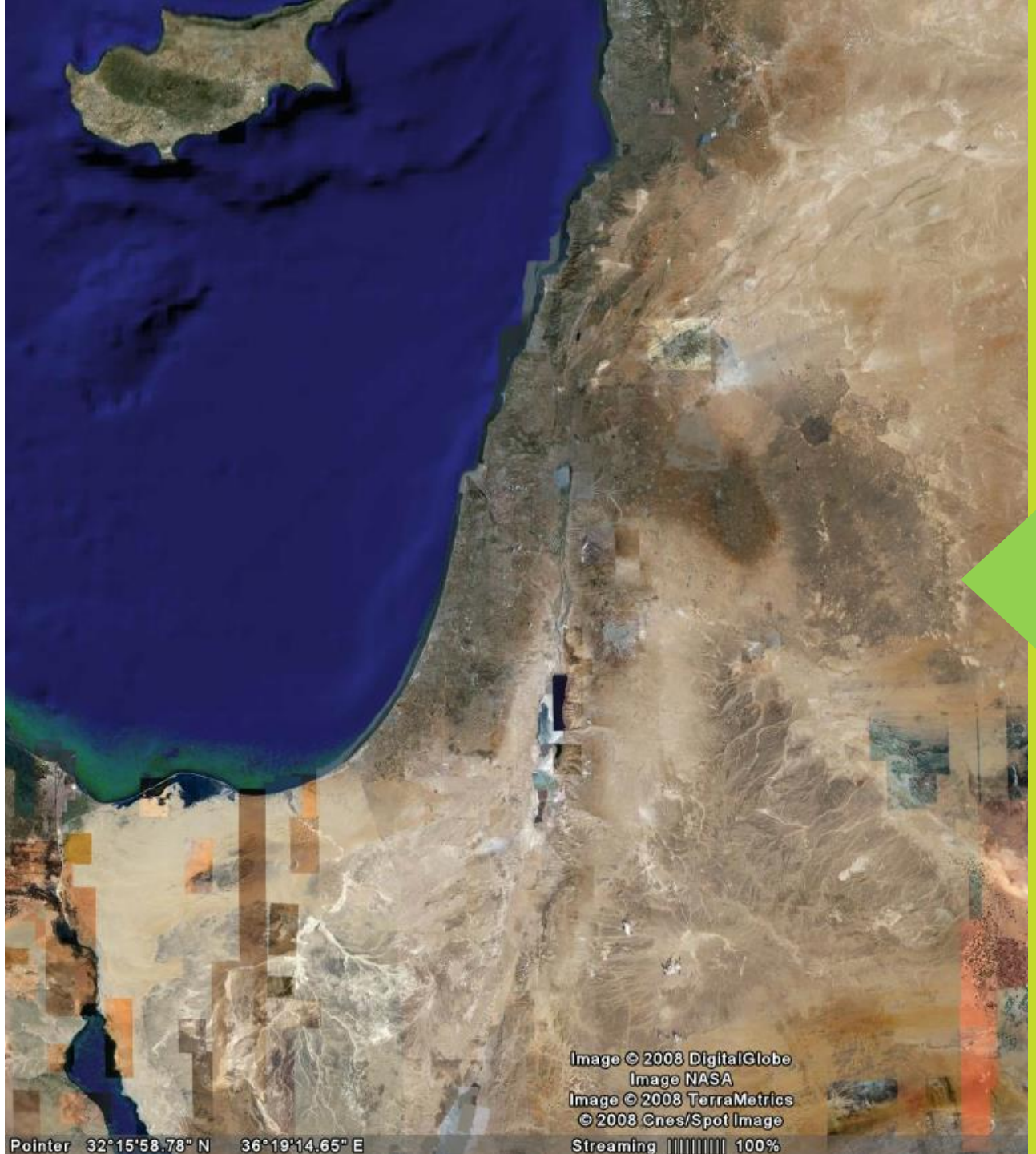
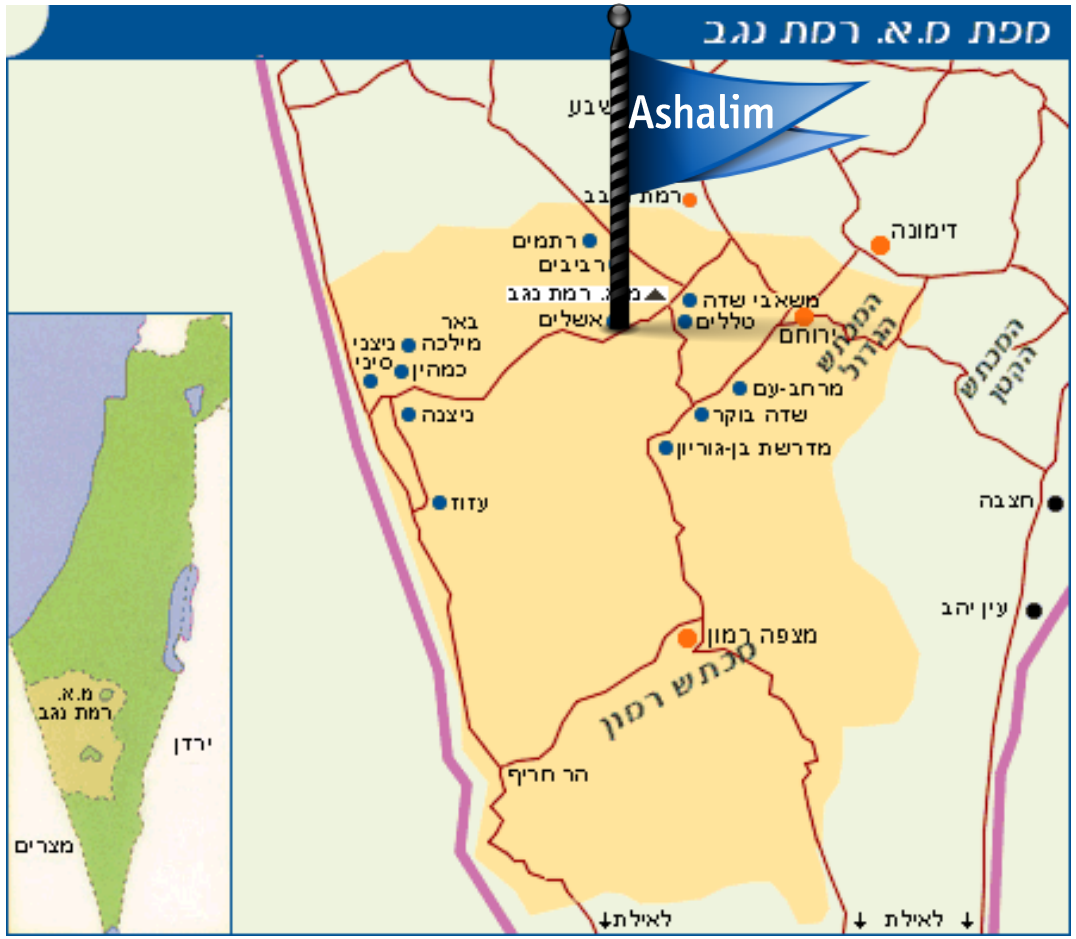


Project location

Project Location – Plot A



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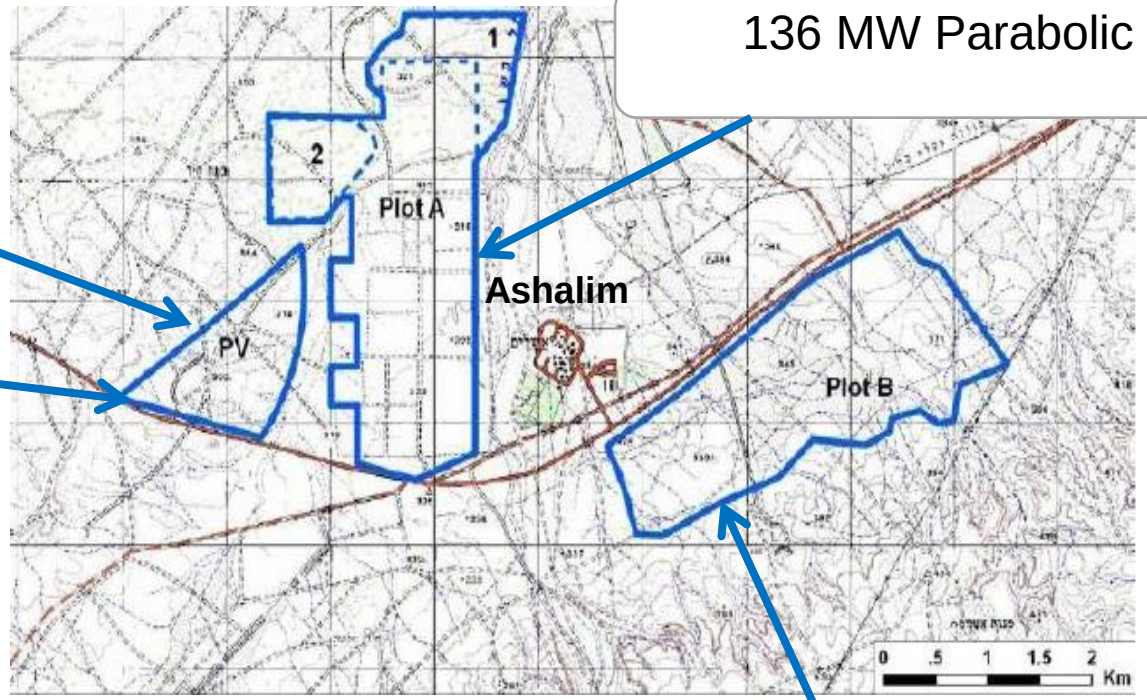
Project location – Plot A

Solar energy's silicon valley is under construction near by the town of Ashalim – a complex of four projects of 340 MW total power installed

136 MW Parabolic Trough

30MW PV

40MW PV – new bid



130 MW Tower

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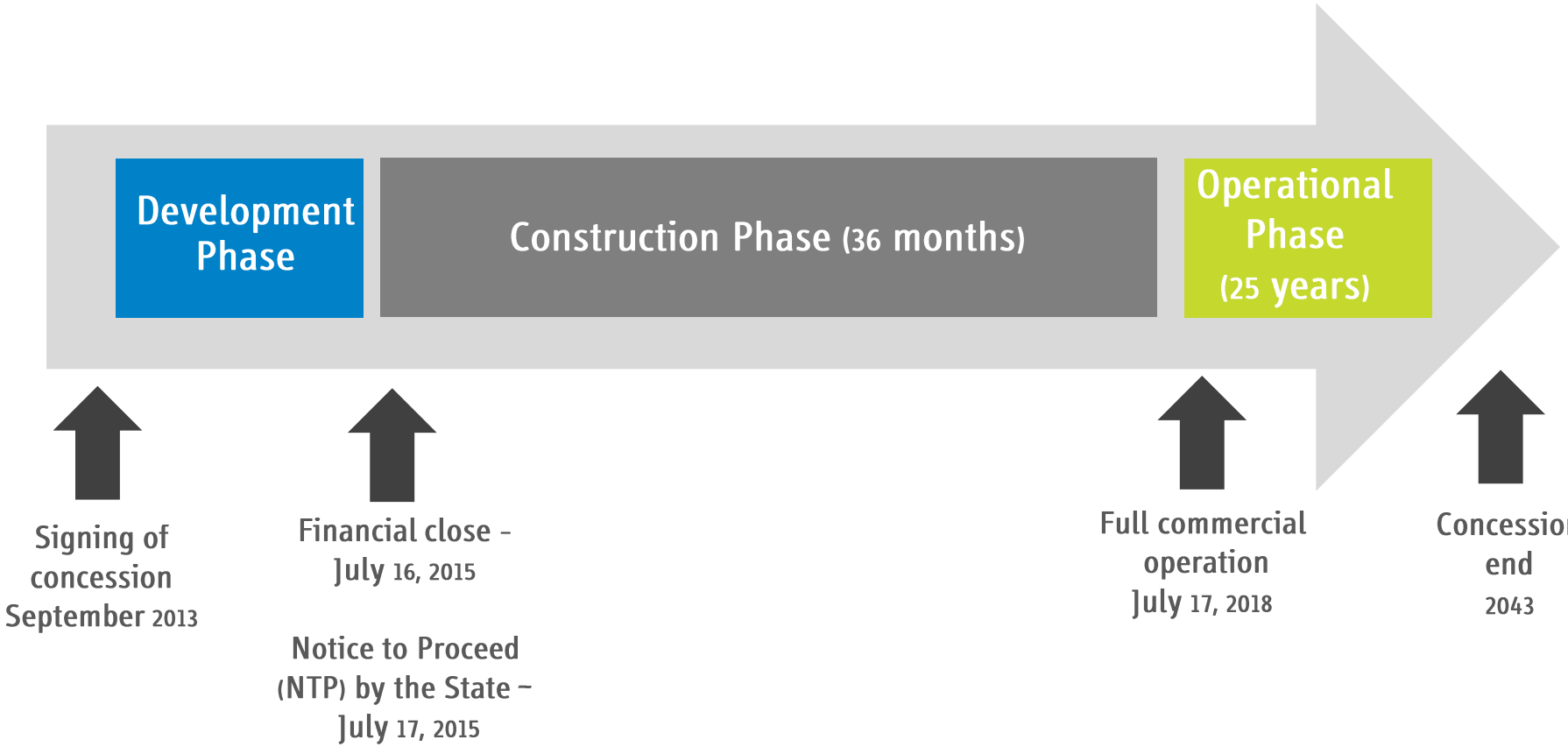
The Project

Summary of the Project

Description of the project	BOT (build, operate, transfer) concession agreement for planning, financing, construction and operation of a thermo-solar power station for 28 years through 2043
Description of the project	The project is a milestone in the implementation of a national objective of 10% electricity generation from renewable energies by 2020. The project is being constructed pursuant to National Outline Plan (NOP) 10/B/1 – Solar Power Stations at Ashalim, which has been approved by the Government
Total project volume	Approximately NIS 4 billion
Duration of the construction period	3 years 7/2015 to 7/2018
The electricity purchaser	Israel Electric Corporation with State guarantee
Global financing	USA OPIC, European EIB, Israeli Bank Leumi, Bank Hapoalim and a consortium of Israeli financial entities

Project Schedule



Main Technology Properties

Natural gas	Thermal storage	Cooling	Land area	Technology	Annual output	Power
Up to 15% of generated energy	Molten salt; 4.5 hours	Water	About 3.9 Million m^2 – Israel Land Authority land	Parabolic trough	About 440 GWh Supply to about 60,000 Homes (Haifa)	136MW steam turbine

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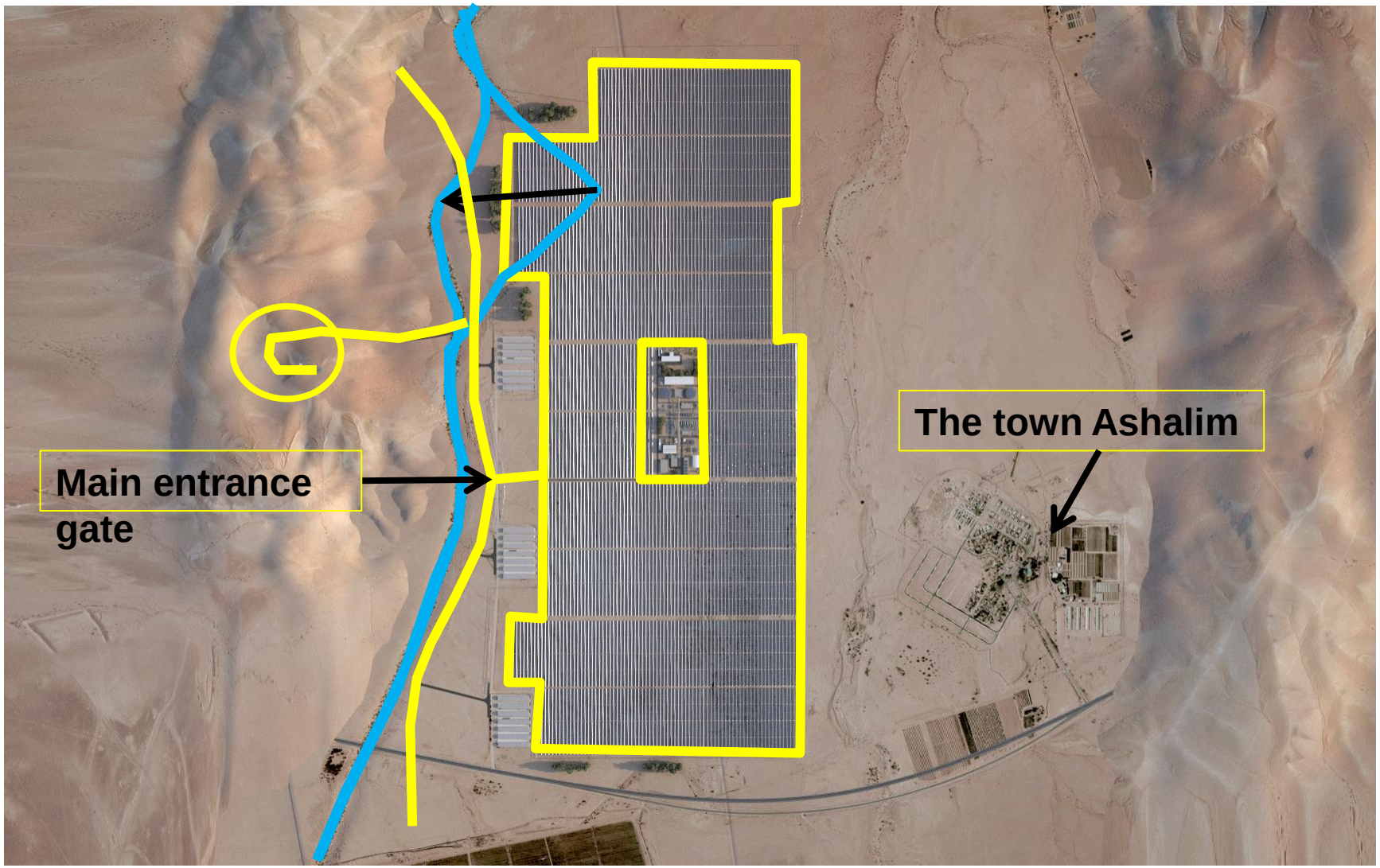
Project Layout



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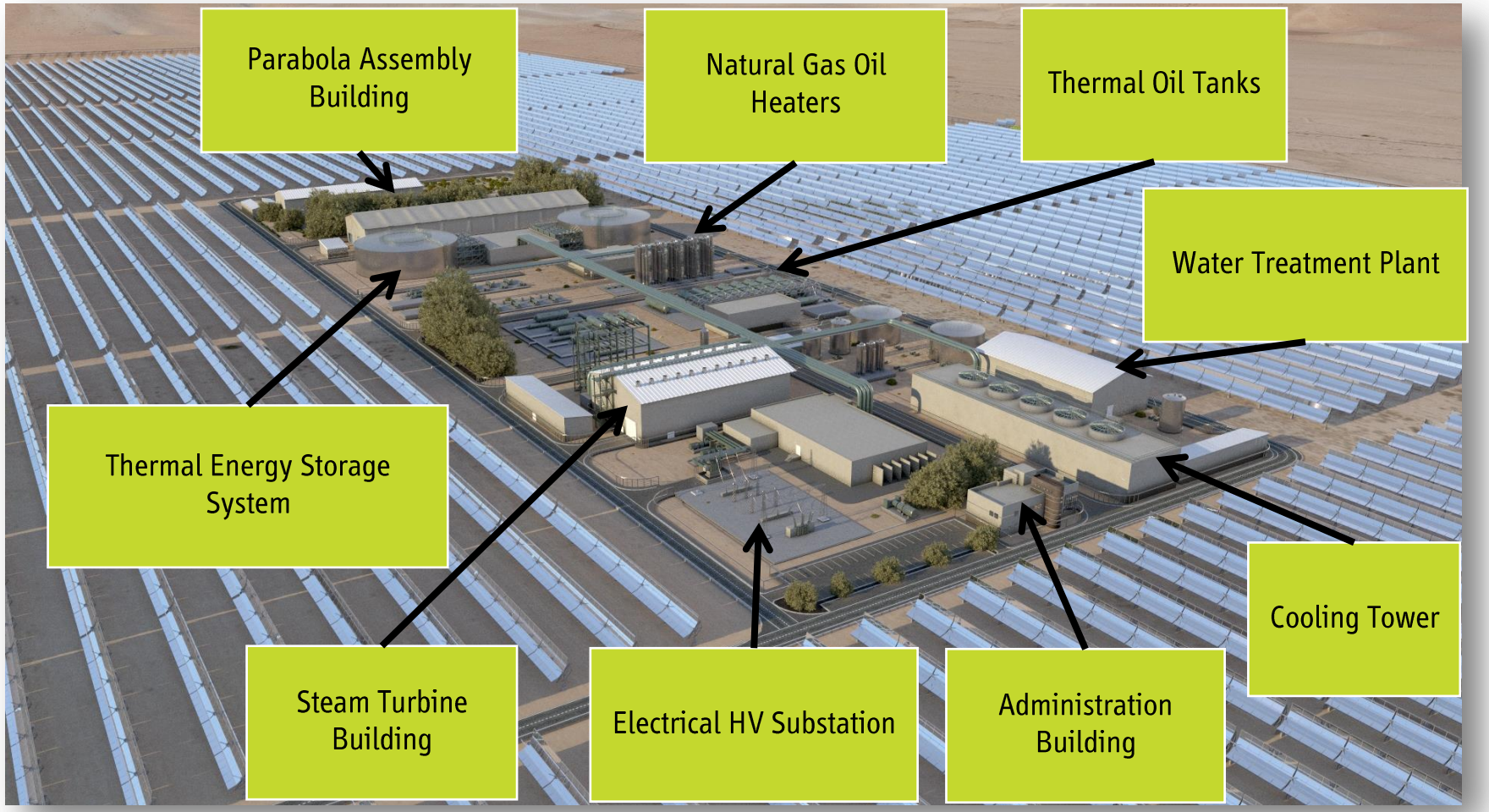

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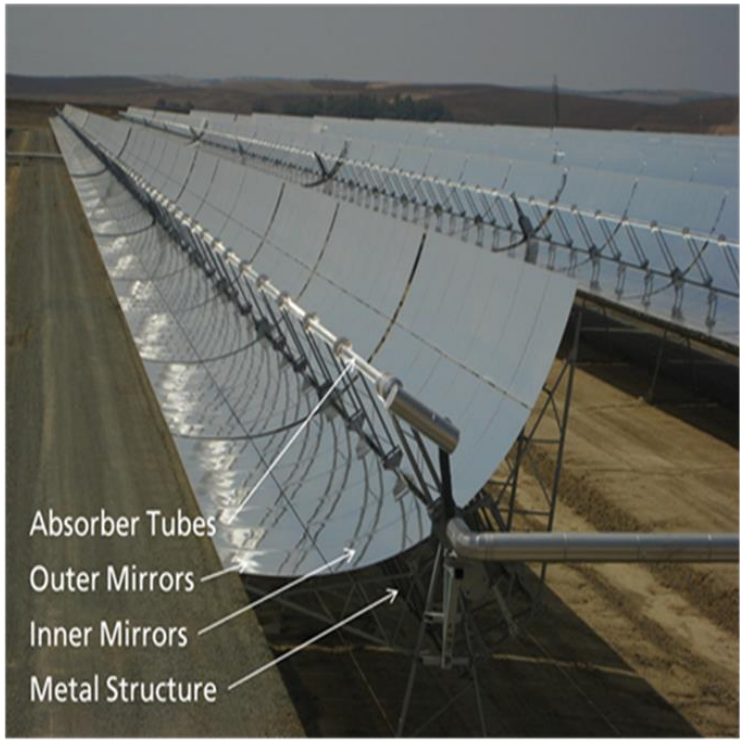
How it works

Technology in a Nutshell – Parabolic Trough



Sunlight is collected by a panel system in the solar field – parabolic mirrors supported by a metal construction

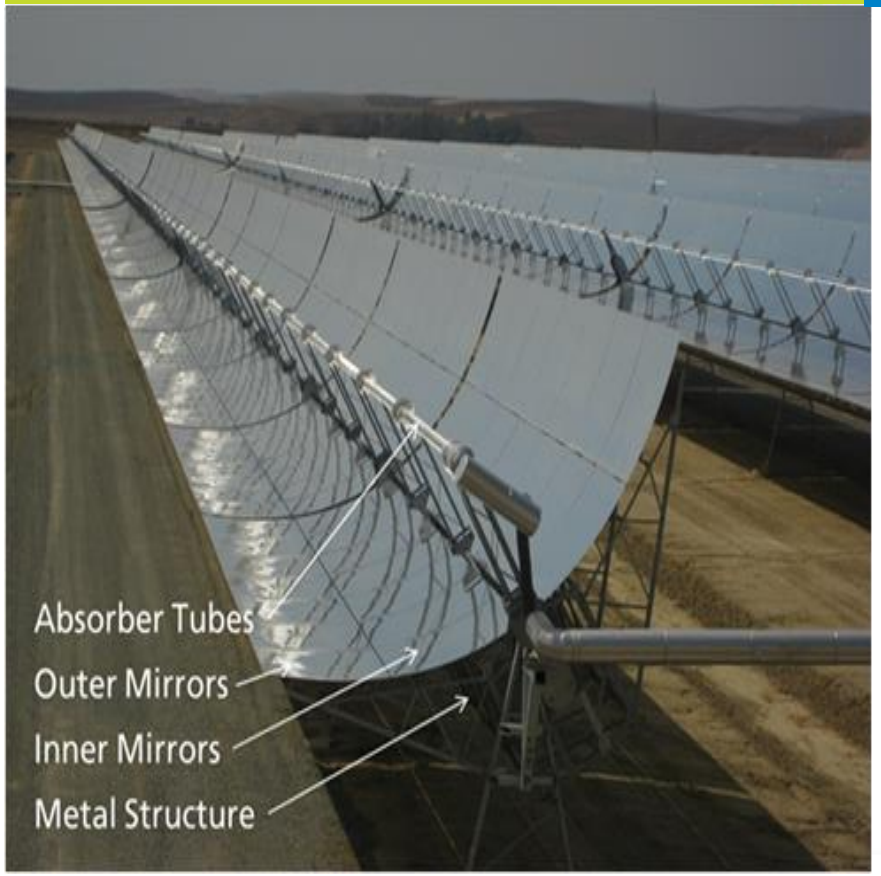
The mirrors track the sun and concentrate sunlight to special tubes that are at the focus of the parabola

Due to the irradiation concentrated to the tubes, a heat transfer fluid (a synthetic oil with unique thermal specifications) that is flowing inside the tubes is reaching a temperature of about 400 °c

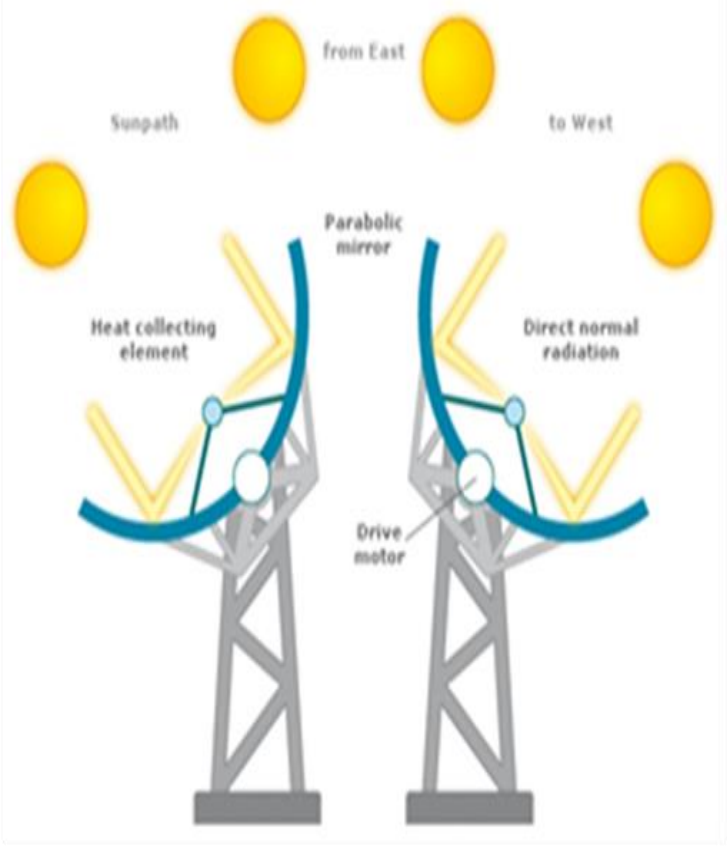
Using heat exchangers, the heat is transferred to water, which turns into steam, driving a turbine that generates electricity

Technology – Parabolic Trough

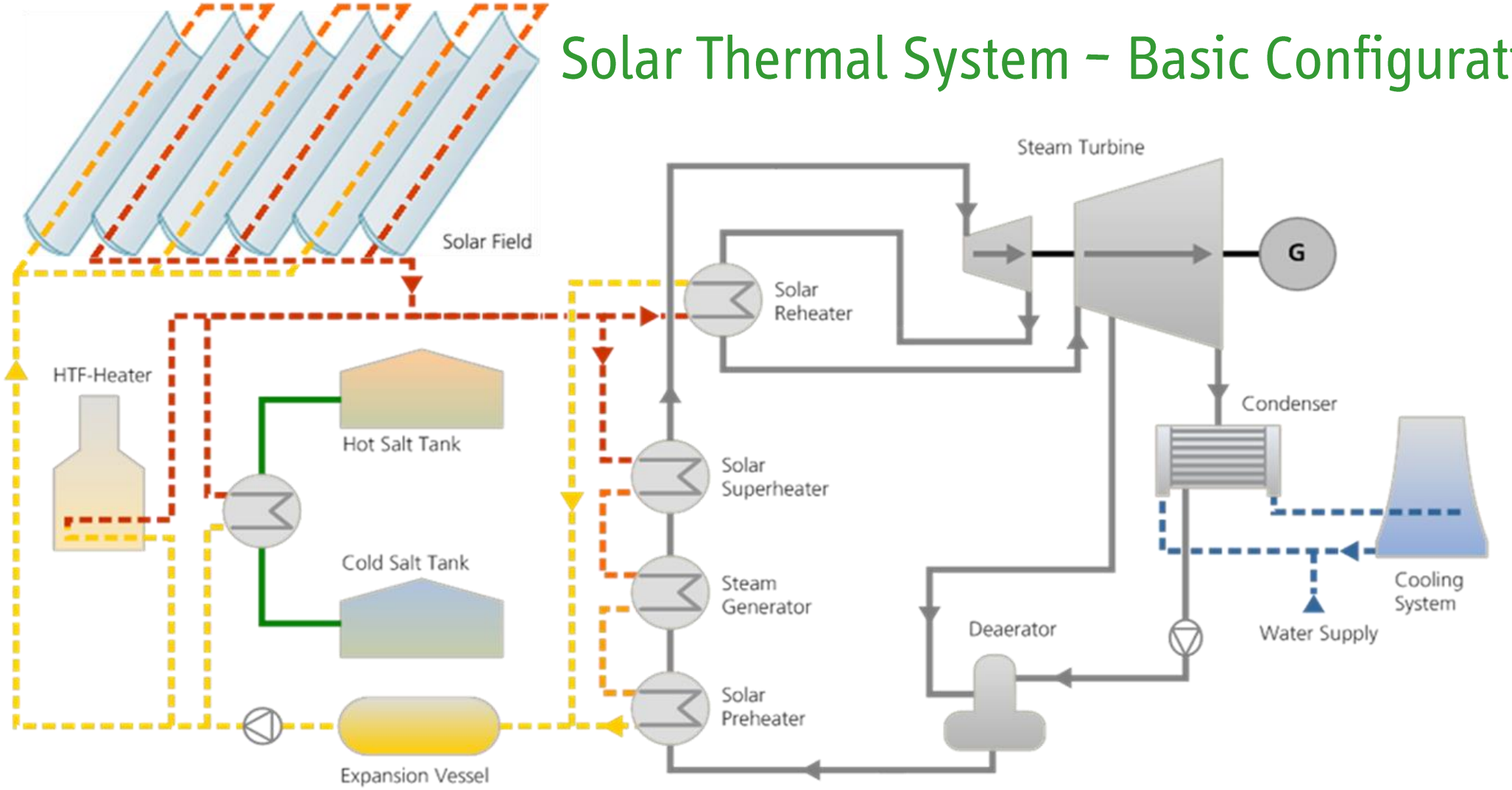
Parabolic trough



Trough tracking of the sun during the day from east to west



Solar Thermal System – Basic Configuration



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Status of Works

Overall Progress Status – 31 July 2016

Discipline	Weight	Actual Accumulative Progress
Engineering	6 %	92.1%
Procurements	4 %	89.8%
Manufacturing and Supply	49 %	60.3%
Construction Overall	34 %	36.7%
• Civil Construction	17 %	66.2%
• Mechanical Construction	14 %	8.7%
• Electrical Construction	2 %	1.2%
• I&C Construction	1 %	0.0%
Commissioning	7 %	0.0%
Project Overall	100 %	**51.2%**

Contract accumulative progress: 46%

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New Mirror Modules Erected in Area 4

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Construction - Main Electrical Building civil works

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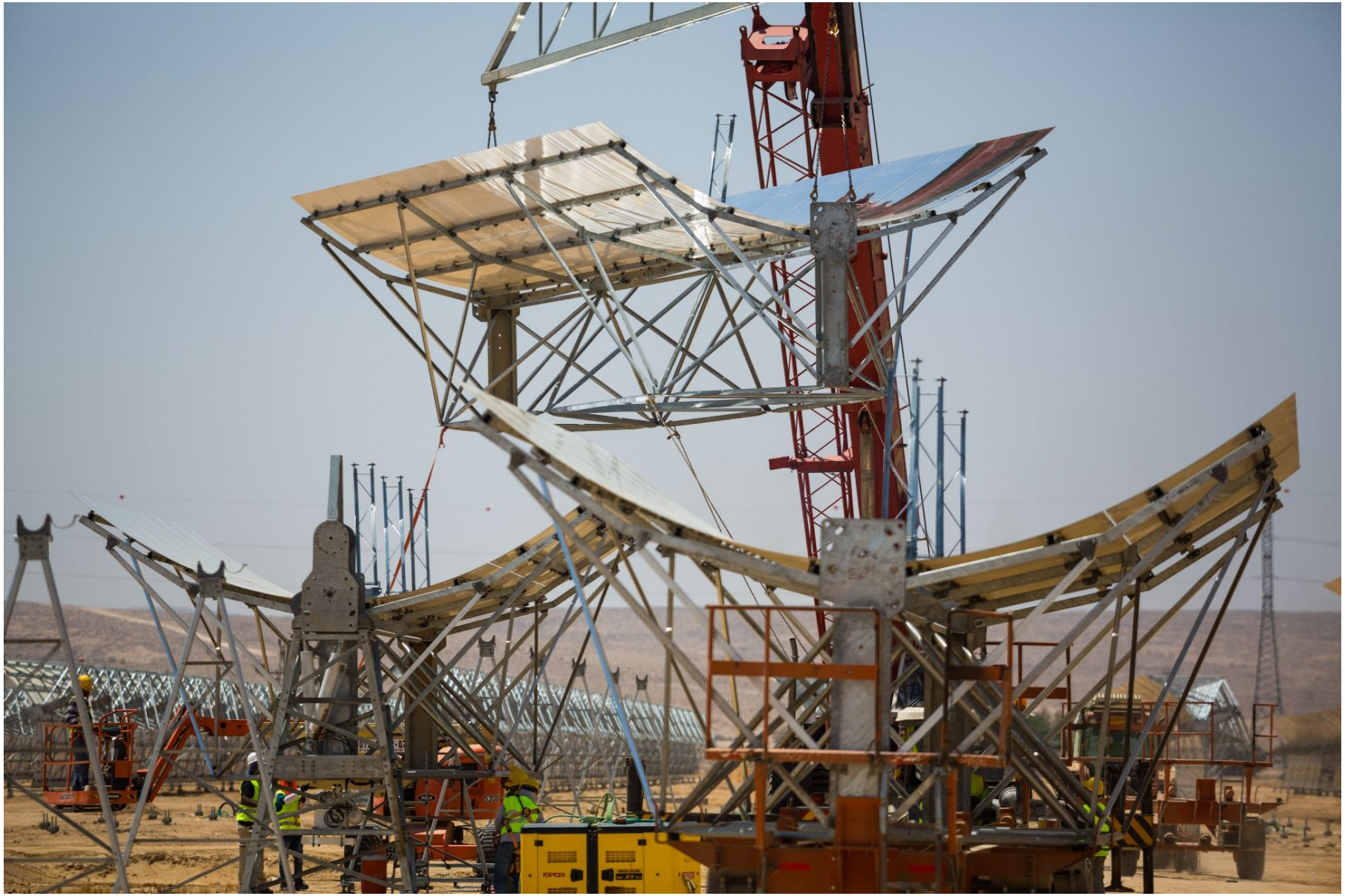

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E-2611
E-2613
E-2613
E-2611

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First Pair of TES Heat Exchangers Erected

Solar Field Auxiliary Electrical Building No. 1

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The Abengoa Crisis

25 November, 2015 Abengoa Financial Crisis begins:

“ Receives Protection under Article 5 BIS of the Spanish Insolvency Law which, for a period of three months (extendable to four), allowing the company to protect and preserve the company’s value while it works on the design and development of an appropriated viability plan for its future…”

Abengoa 5 BIS – Deep Sh……

Actual progress: 36% ; Contractual progress: 18% ; Early works since May 2014

SB and Abenoga are sharing 50:50: Ownership (SPC), EPC, O&M

Injected Equity: 100 % ; Abengoa's share in Equity as a loan from SB

Abenoga – sole Technology Provider : Solar Field and TES (design only)

Lender's contribution: ZERO ….. out of $800 M

Abengoa 5 BIS – Was it expected ?

December 2013 Concession Agreement

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Abengoa 5 BIS – 9 months after – 8.8.16

Actual progress: 50% (36% in Nov. 2015) ; Contractual progress: 45%
Effect on Completion Date: ZERO

New Structuring: EPC - SB 67.4% ; TSK 32.5%
Ownership and O&M - SB 50% ; Noy Fund 40% ; TSK 10%

State of Israel: no change in Concession Agreement and Tariff

Abenoga – As subcontractor for Solar Field

Lender's contribution: $ 250 M

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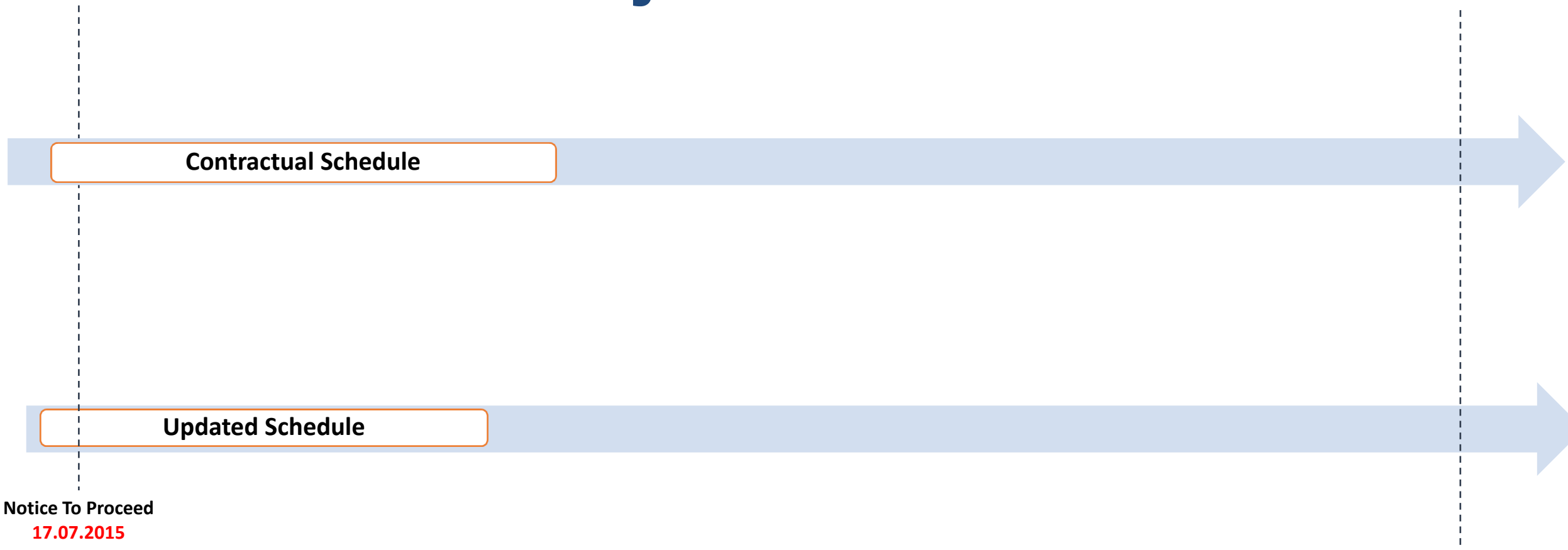
Design Changes

1. Schedule
2. Process

Project Timeline



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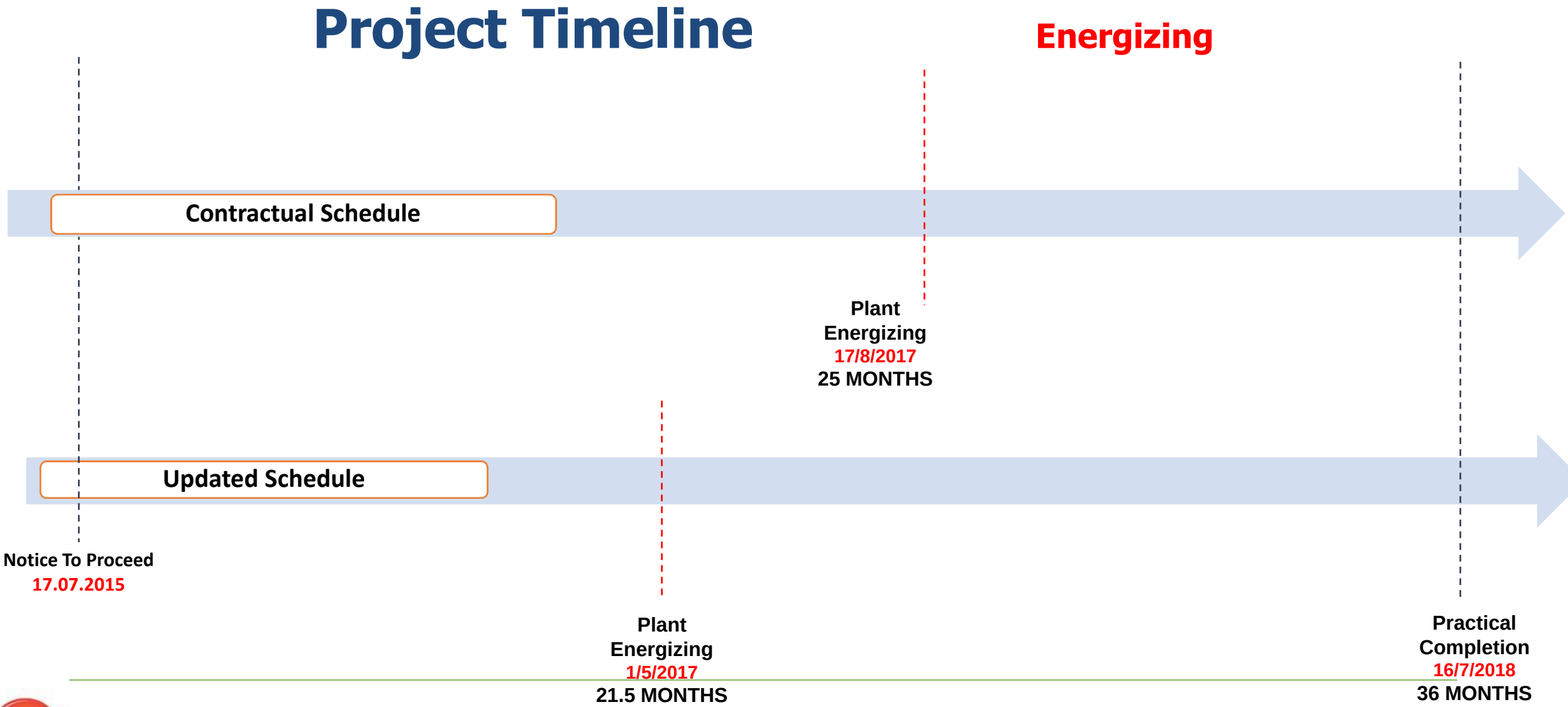

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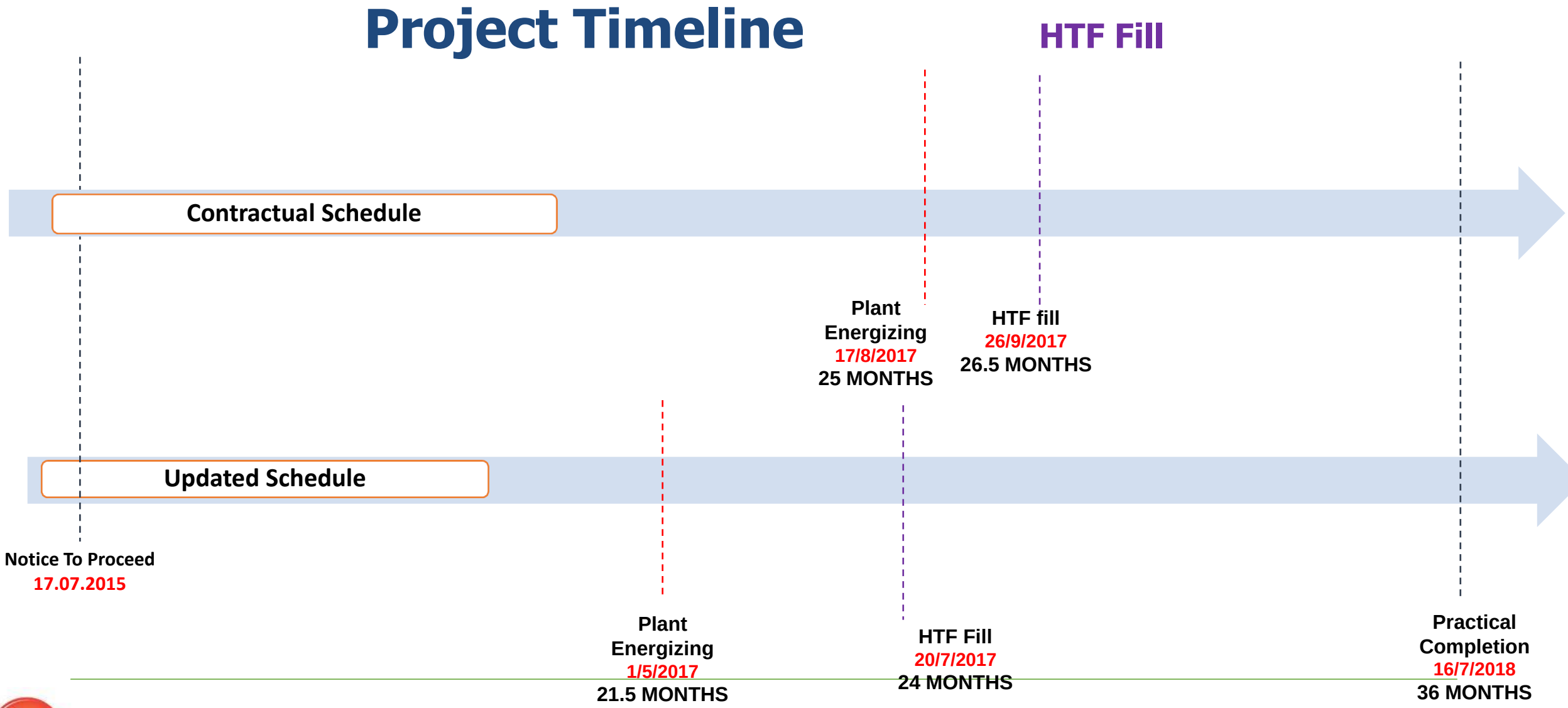

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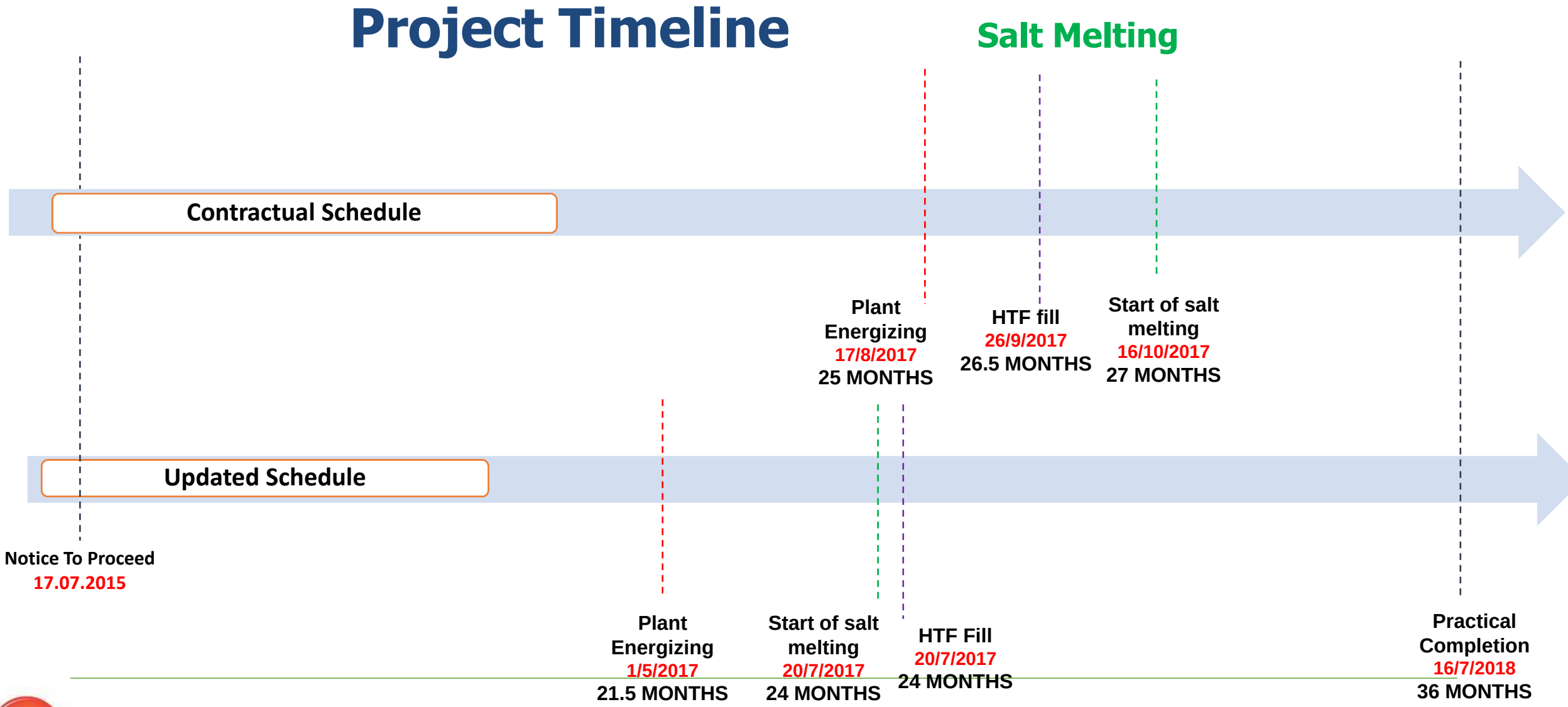

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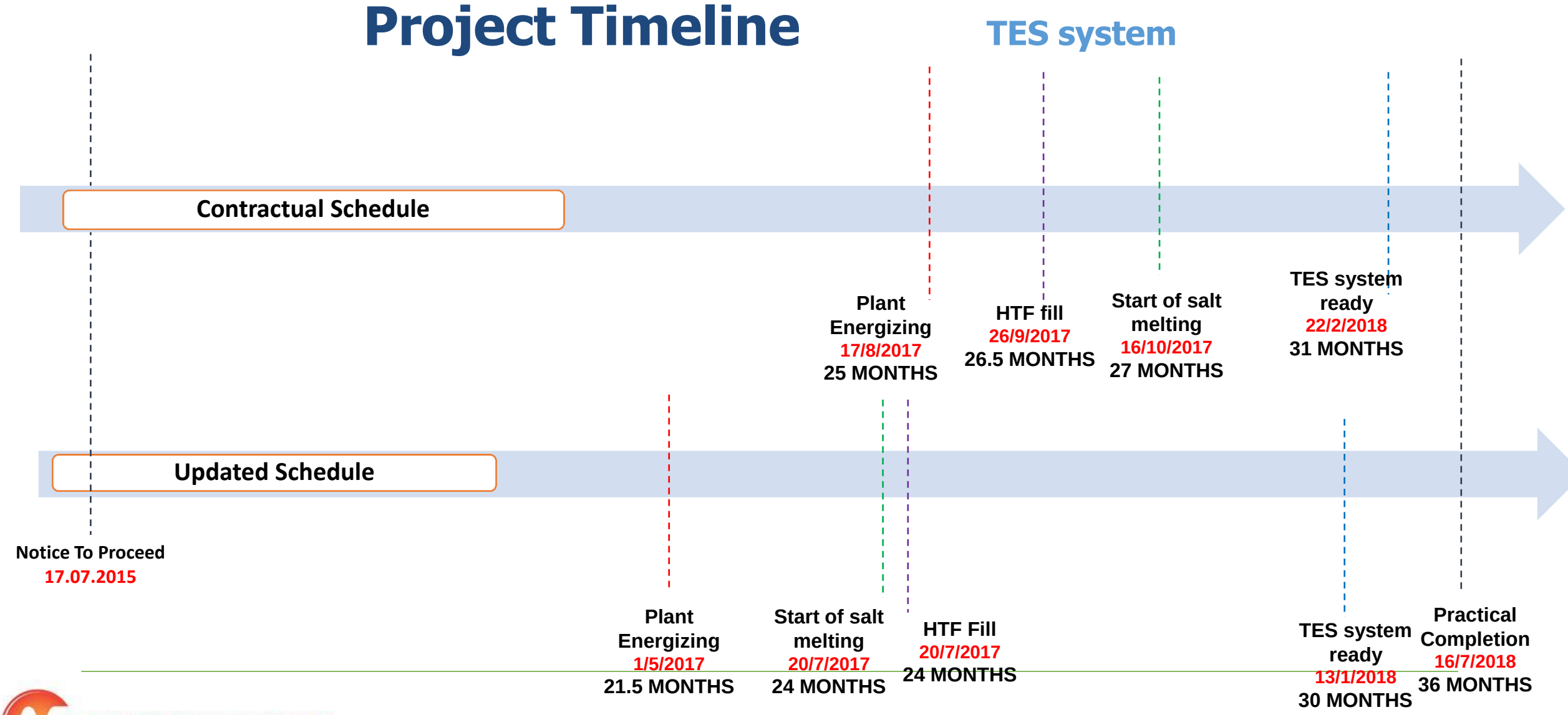

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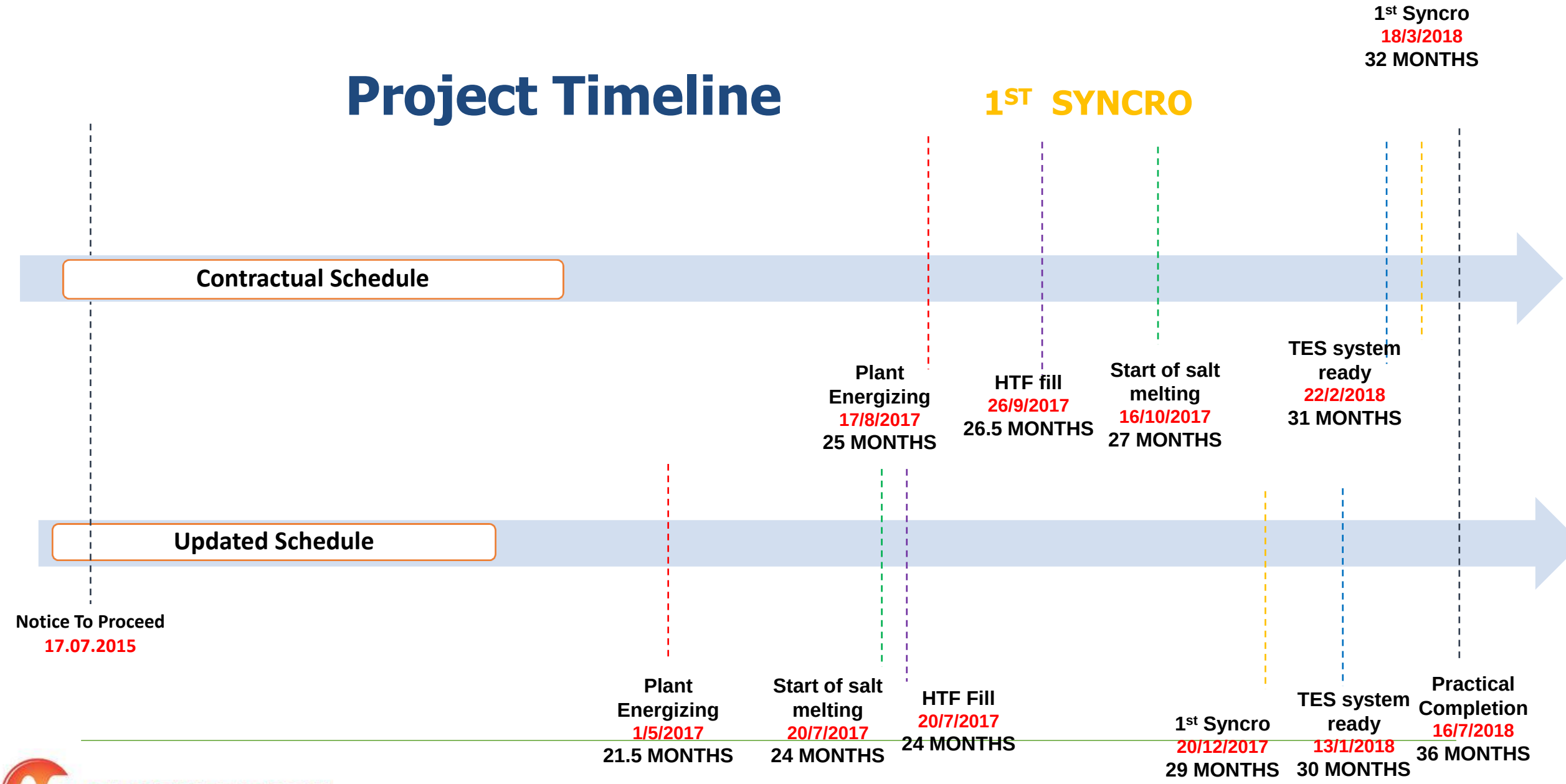

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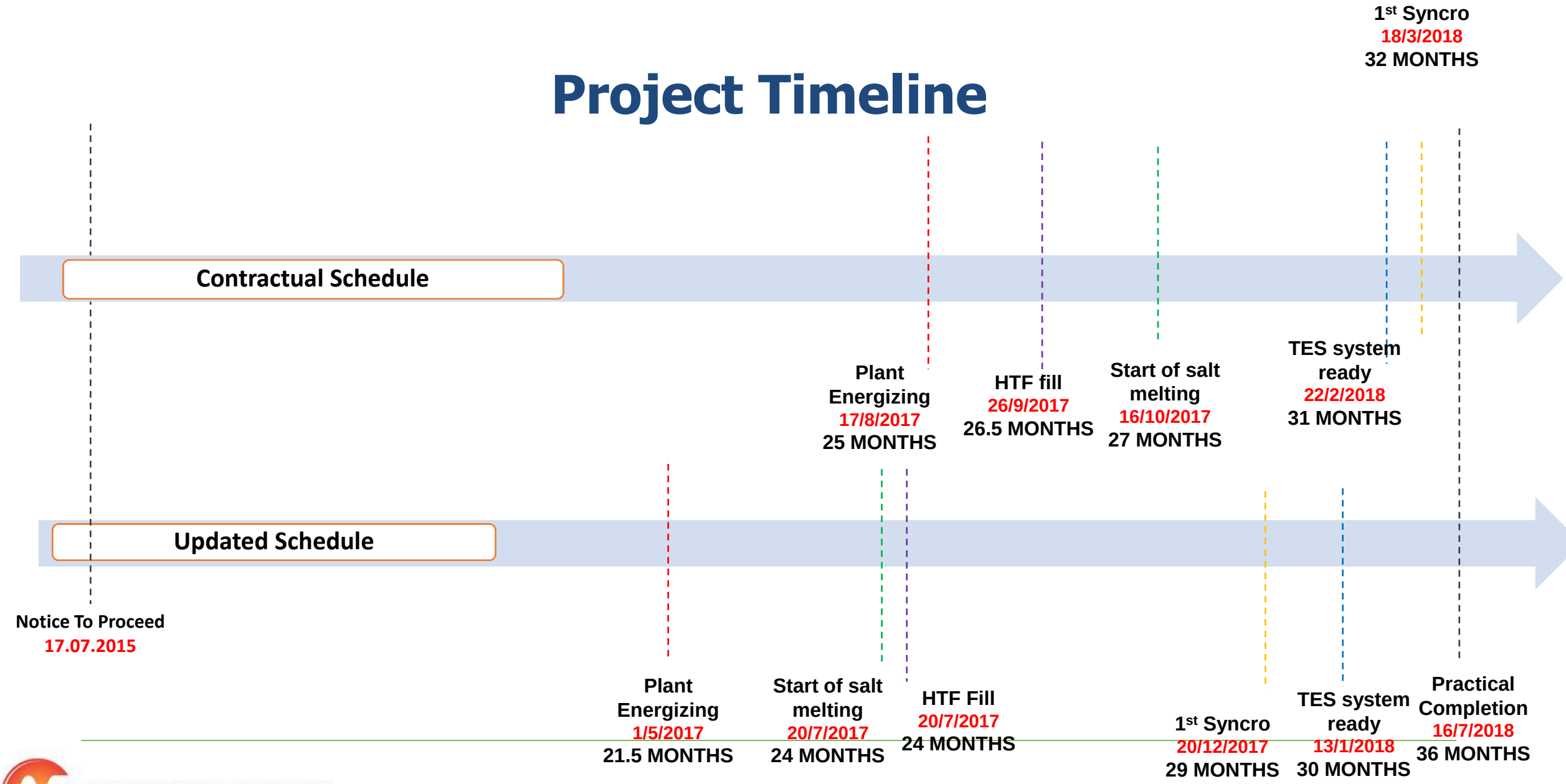

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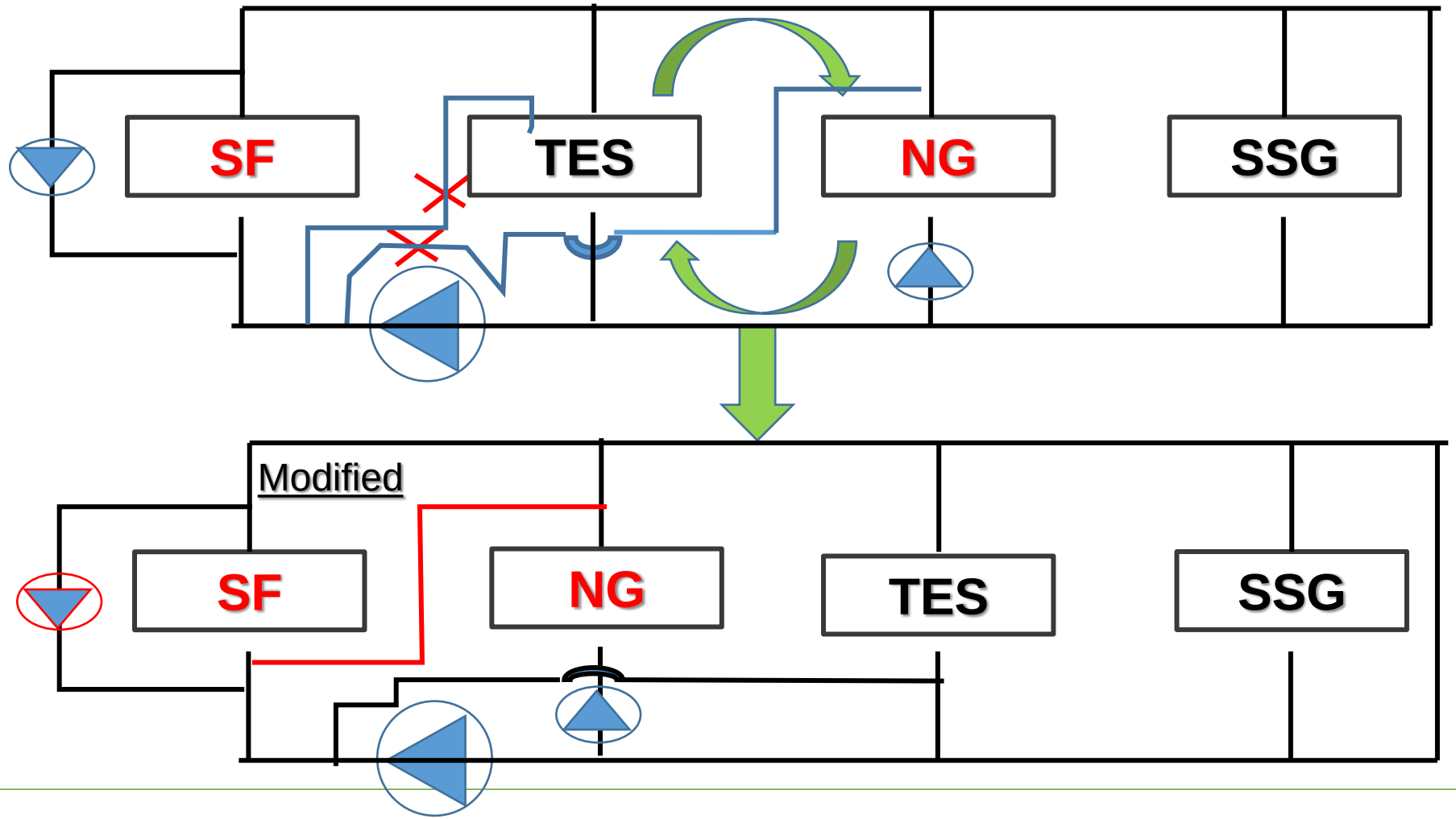
Required design modification



Thank you

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