



# Karachaganak Expansion Project

## Stage 1A & 1B

### Structural Delivery



# Project Partnerships

<p><b>Operators</b></p>	     
<p><b>Engineering Procurement Construction (EPC) Team</b></p>	<p>TBA</p>
<p><b>KEP Delivery Team</b></p>	 



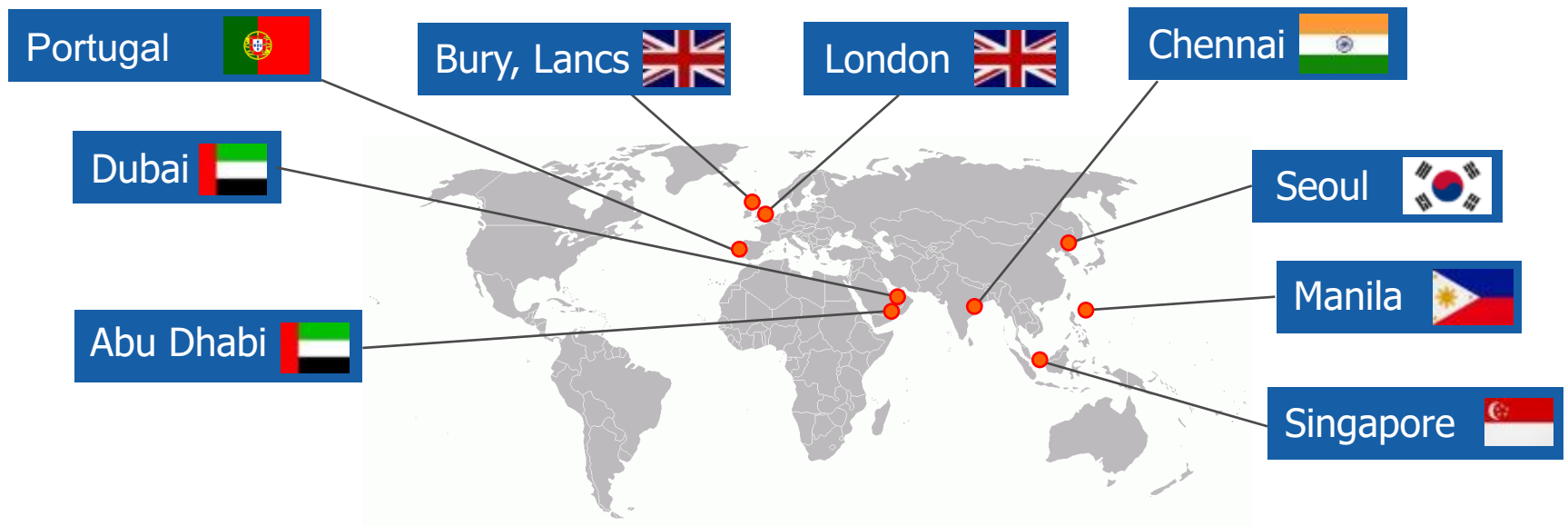
# Structural Delivery Team - WHG

- Active in steel fabrication since 1945 with origins dating back to 1880s
- Largest privately owned Structural Steelwork Contractor in Europe
- Fully integrated contractor
  - Engineering
  - Fabrication
  - Treatment
  - Steelwork erection
  - Sub trades (e.g. flooring, cladding etc.)



# WHG– Overview

- Group turnover: \$300 million
- Worldwide capacity: 165,000 tonnes per annum
- Worldwide employees: 2,000 people





# Structural Delivery Team

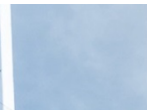
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# World Class Fabrication Facilities

Leading Edge Technology





**HARE**



# World Class Fabrication Facilities

Leading Edge Technology



# WHG Engineering Capabilities

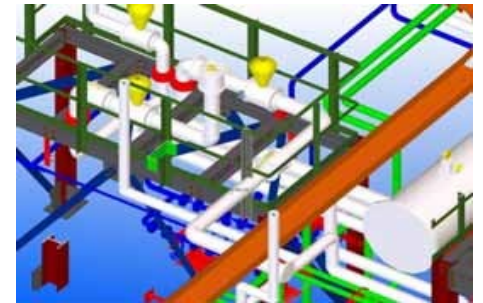
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The ability to successfully procure, manufacture and construct emanates from Engineering.

WHG maintains a skilled resource, both to drive its own activities and to supplement clients resources.

Specific benefits / technical skills include:

- 3D and 4D modelling
- Early engagement to influence cost effective design
- Ability to work with conceptual information
- Award winning approach to BIM
- Tangible cost and time savings through Value Engineering enhances safety



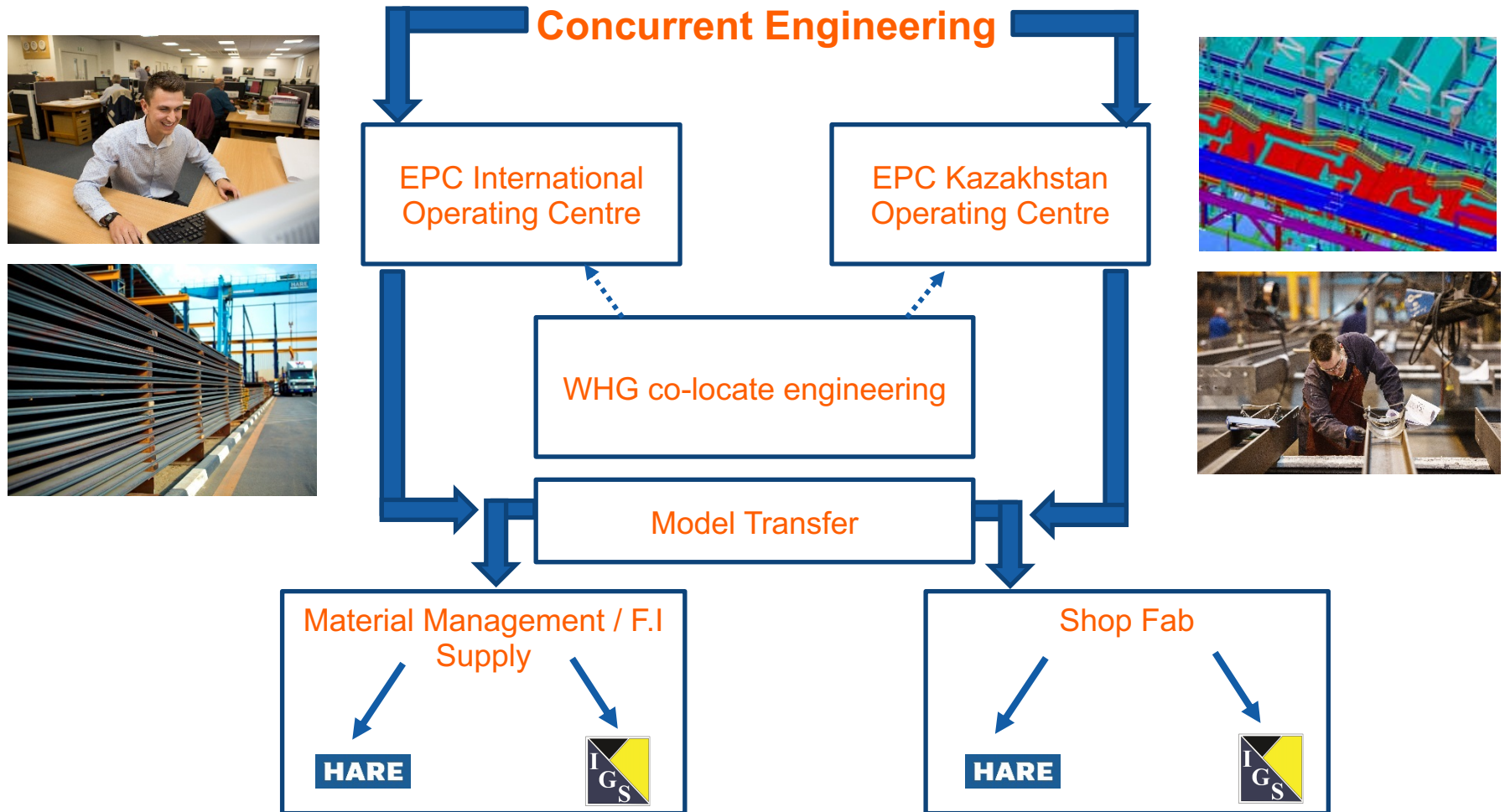


# Project Execution Strategy

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## Engineering Strategy



# Procurement Strategy

Purchased by EPC Contractor – assisted by WHG



All Sectional Steel

Plate Fitting Materials

  
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**HARE**

## Rationale:

For sections, WHG has global supply chain partners and bulk ordering agreements which will enable EPC to procure sections at most cost effective rate.

For plate, possible cost effective for IGS to source locally. (TBC)





# Pre Fab Strategy



Cut and Drill all Sections



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## Rationale:

Makes use of WHG high integrity fabrication facilities – automated machinery via NC data for higher speed and quality.

Use of NC data allows automatic transfer of data from model, removing potential for human error.





# Transportation Strategy



Pre Fab Shafts – Delivery from WHG facilities to IGS in Kazakhstan  
Completed Items – Delivery from UK to Project Site



## Rationale:

Sections for Kazakh fab transported via KEP/EPC taking advantage of competitive rates from global volumes.



# Treatment Strategy



WHG Production  
Facility



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Kazakh Fab



## Rationale:

Done locally in WHG Facility or Kazakhstan according to primary fab location. Work completed prior to final shipment.



# Final Fab Strategy

Produce fittings, complete assembly and welding

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## Rationale:

Aim is to fully load IGS plants to available proven capacity with a mix of work to suit project demands.





# Pre Assembly Strategy



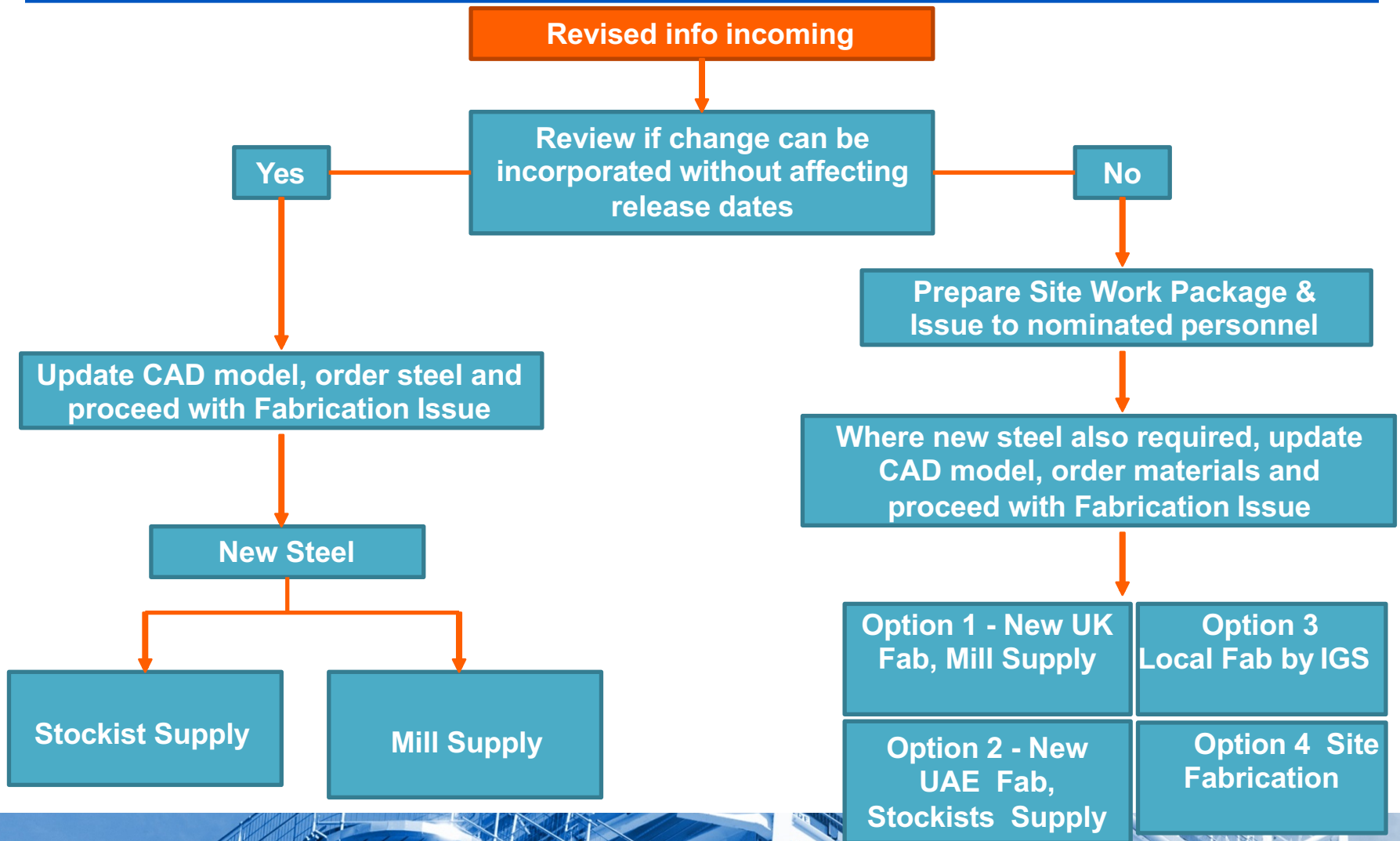
## Rationale:

Offsite pre-assembly in IGS plants maximised to minimise site labour / time on site





# Change Management Strategy



# Closing Summary

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The **key benefits** of the IGS-WHG Structural Delivery Team are:

- Engineering, right first time in line with construction path and project schedules.
- EPC Procurement access to global mills with WHG pre-leveraged agreements.
- Pre-fabrication: implementation of CAM lines to give high integrity sawing and drilling, greatly enhancing field fit up and minimising fab errors.
- Fabrication engaging in-country **Kazakhstan fabrication**, addressing a major project driver.
- Opportunity for **major local pre-assembly** to reduce field time, resource and all weather activity
- Construction coordination assistance for the receipt, safe storage and on site assembly



**Thank you /  
Any Questions**

**PAXMET /  
СҰПАҚТАР**