Exercise 4

Local Content Forecasting using DAI SBG's Local Content Optimization Model

DAI SBG uses its Local Content Optimization Model (LCOM) to support its Industrial Baseline Studies around the world, in which we conduct rigorous analyses of the supply and demand for local content, run various scenarios to identify gaps and provide strategic recommendations to our clients.

DAI SBG uses the scenario comparison functionality of LCOM to 1) Compare and contrast local content outcomes based on different capital project decisions, such as contracting strategy, technical scope inclusion/exclusion, and technology choices; and 2) Compare and contrast local content outcomes resulting from variance in supplier inputs. For this exercise, you will be using the scenario functionality to look at the local content outcomes resulting from differences in supplier competitiveness (i.e. #2 from above).

In this hypothetical case study, Paxlandia is seeking to understand how its business competitiveness has changed over time. You and your team will be taking on the role of a DAI Project Team and be running a local content forecasting simulation of a LNG project. As part of this exercise, you will be comparing two scenarios—a Past Paxlandia and Paxlandia Today. Past Paxlandia represents the supplier landscape 10 years ago. The parameters of the capital project will be the same for each scenario.

After completing the exercise, you will be discussing your team's findings and thoughts on how these two scenarios differ with the group.

Objective: Understand how local content can be forecasted; practice analyzing outputs; use local content forecasts to make project development planning decisions.

You and your team must select 5 priority supply chains around which to develop more local content. Why would you choose and why? Use the questions below to help think through the problem. Be prepared to:

- Explain why these categories lend themselves to local content development;
- Explain what trade-offs you will make, as not all opportunities can be afforded.

Analysis Questions

Think about the following questions and how the two scenarios compare to each other. Use the LCOM Output Page Guidance handout to help interpret the graphs.

Scenario 1 (left side): Past Paxlandia
Scenario 2 (right side): Paxlandia Today

1) What do the project level local content metrics tell you about the opportunities for local firms in each scenario? Compare each scenario.

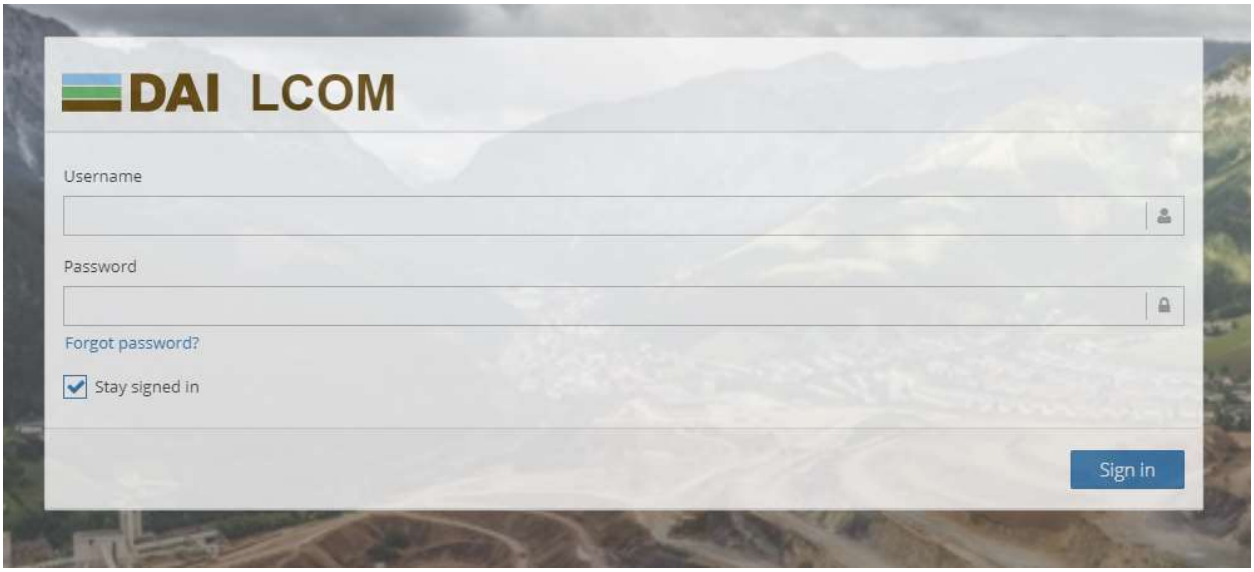
2) What metrics do you feel are most informative?
3) How does the local content by contract type shift between each scenario?
4) Which supply chains are the most competitive in each scenario? Explain your reasoning.
5) Which supply chains capture the greatest local content in each scenario? What metrics are you using to make this assessment? Explain your reasoning.
6) Which supply chains are the least competitive in each scenario? Explain your reasoning.
7) Which supply chains capture the least local content in each scenario? What metrics are you using to make this assessment? Explain your reasoning.
8) What supply chains are most improved over the 10 years? What supply chains are least improved?
9) What does the timeline graph tell you about how local content is captured throughout the project life in each scenario? What differences do you see between each scenario?
10) At what skill level are the majority of local jobs? What does this tell you about the local workforce? How have job opportunities shifted over the 10 years?
11) Which supply chains generate the most local jobs in each scenario? The most expat jobs in each scenario? How have job opportunities shifted over the 10 years?
12) What recommendations would you provide to an International Oil Company (IOC) based on the outputs in each scenario?
13) What recommendations would you provide to a National Oil Company (NOC) based on the outputs in each scenario?
14) What recommendations would you provide to a government body based on the outputs in each scenario?

Local Content Forecasting using DAI SBG's Local Content Optimization Model – Software Guidance

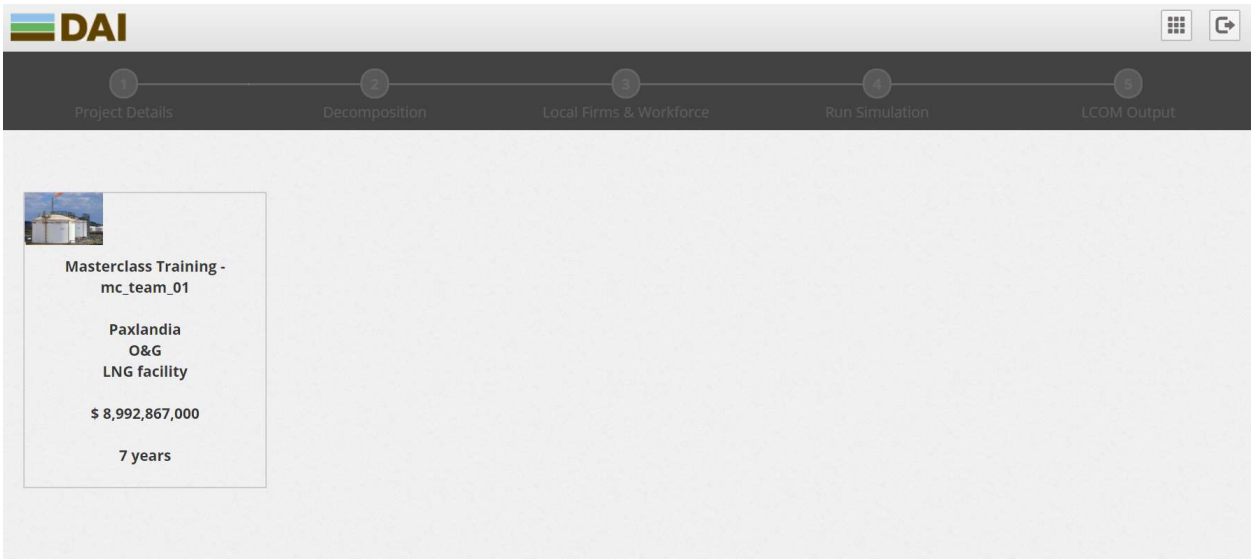
Please be sure to use Chrome.

https://dailcom.com/lcom/login

1. Log in with the username and password provided to you. Both the username and password are case sensitive.

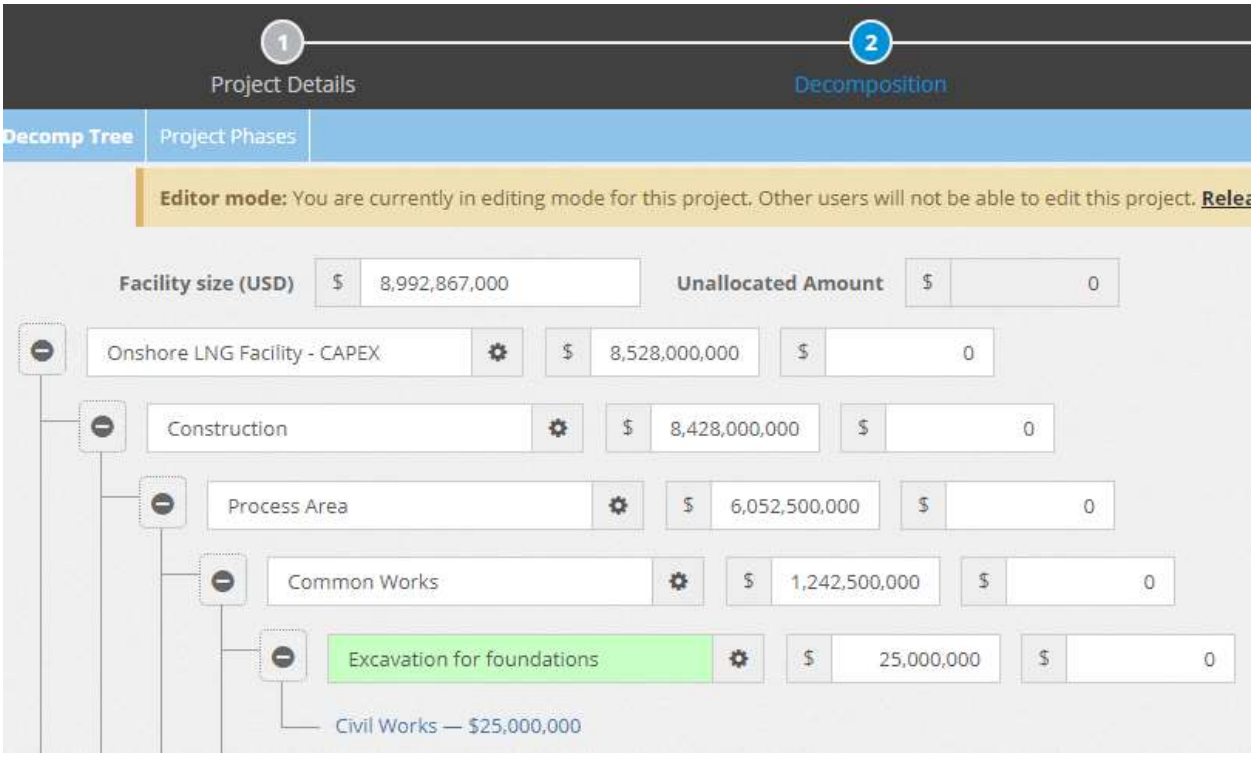


2. You will arrive on a landing page with your team's project. Click on the project.

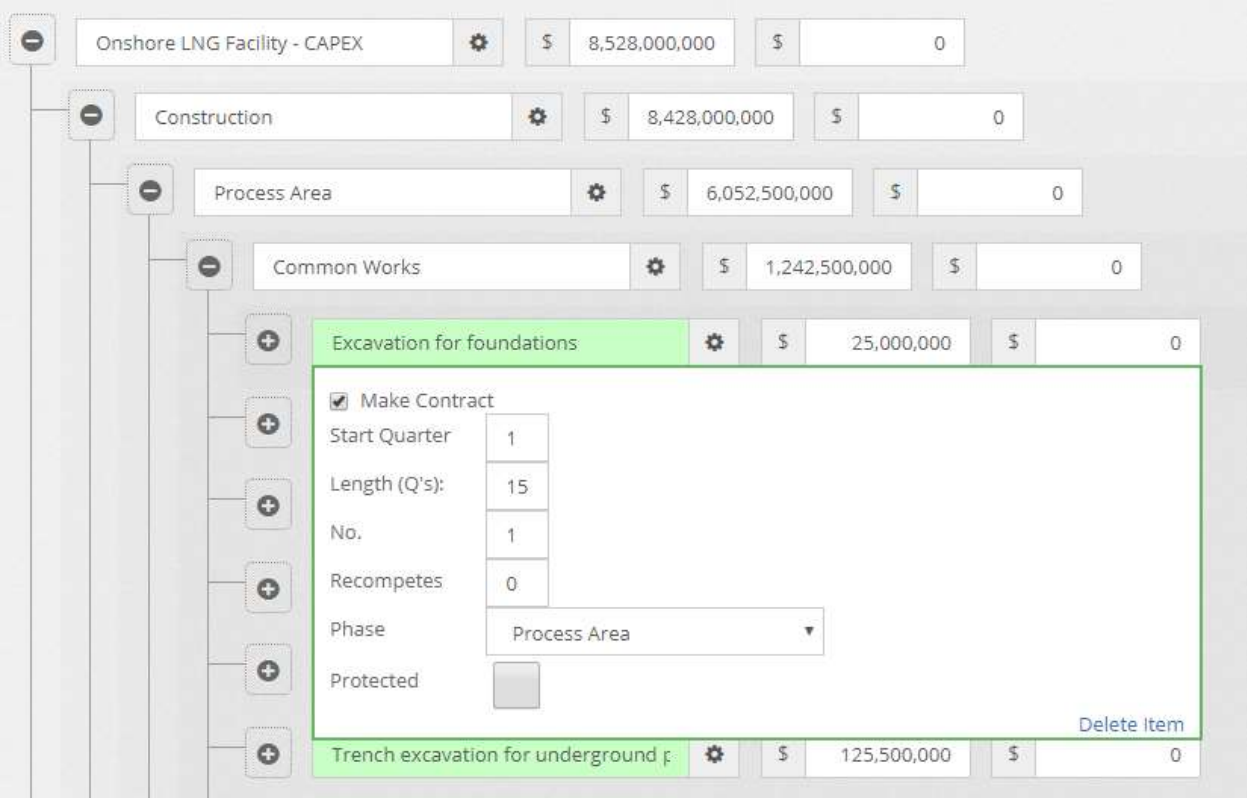


3. Review the Project Details page. Take note of the facility type, investment size, and project length. When done, click Apply Project Details to advance to the next page.

4. You are now on the Demand Decomposition page. This page details the breakdown of the capital project from total spend into unbundled contracts. Use the Demand Decomposition Flow Chart handout to assist you as you navigate through this page. Please do not make any changes to the data on this page.
    a. Click on the ⊕ and ⊖ icons to expand and collapse rows of the decomp



b. For lines that have a contract (highlighted in green), click on the gearbox to see more details.

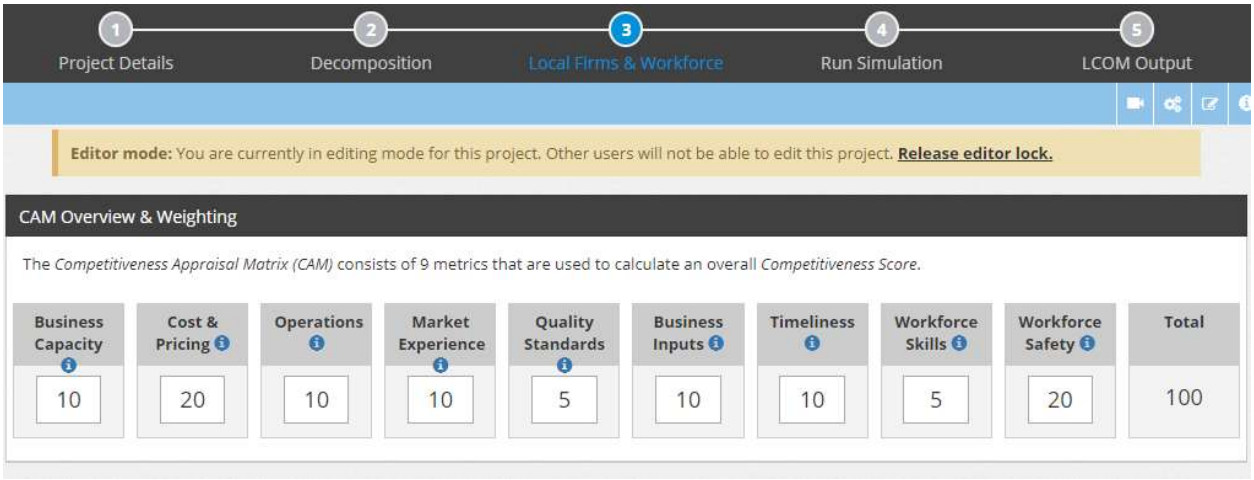


5. When done reviewing the cost breakdown, click on 

at the top of the page to navigate to the next section.

6. On this page, you will see the supply chain level Competitiveness Assessment Matrix (CAM) scoring. These scores are developed from the findings of enterprise surveys and consist of nine (9) sub-criteria of competitiveness. Each sub-criterion is weighted according to the table at the top of the page. Ensure that for the exercise, the CAM weightings are set at:

Business Capacity: 10%
Cost and Pricing: 20%
Operations: 10%
Market Experience: 10%
Quality Standards: 5%
Business Inputs: 10%
Timeliness: 10%
Workforce Skills: 5%
Workplace Safety: 20%



Under the CAM Details by Category heading, you will see tabs representing four CAMs. The first CAM, *Paxlandia Today*, represents the present-day business environment. The second CAM, *Past Paxlandia*, represents the business environment 10 years ago. The third tab, *Tier 1 Contractors* is used to proxy international EPC firms active in the economy. Please do not alter any of the data in these three CAM sheets, *Paxlandia Today* and *Past Paxlandia*. The CAM labeled *Sandbox* can be edited, should your team have extra time and want to dive deeper into the firm competitiveness and attributes.

a) Explore the detailed data on this page by clicking on Detail This will show the sub-criteria scores.
b) Click on the icons to view more information about each supply chain.

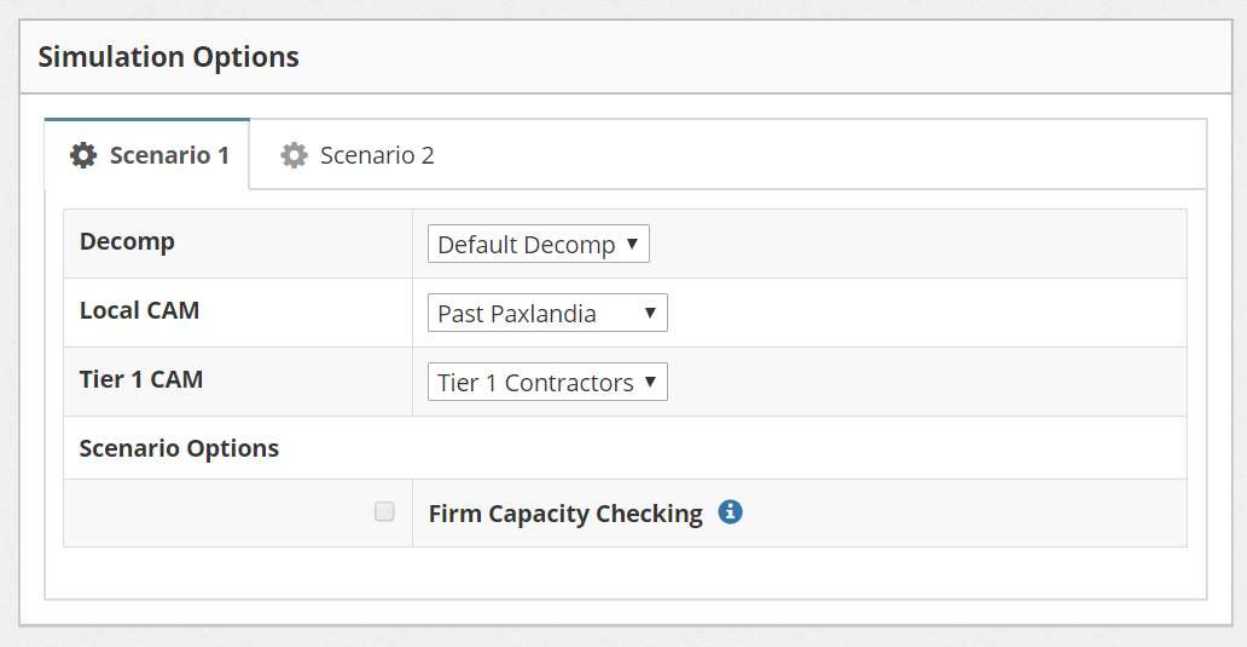
7. When done reviewing the firm and workforce data, click 4 Run Simulation at the top of the page to navigate to the next section.

8. On this page, you will see the settings to run the simulation. We will be running the simulation with the following settings:

Num Runs: 5
Average Metric: mean
Firms Standard Deviation: .25
Get Timeline Output: Yes (checked)
total_value: Yes (checked)
open_value: Yes (checked)
max_open_local_content: Yes (checked)
total_local_content: No (unchecked)
locally_awarded_local_content: Yes (checked)
jobs: Yes (checked)
Eligibility Cut Off: 3.5
Prequalification Cut Off: 5.5
Use Cam Minimums: Yes (checked)
Business Capacity: 2.00

Cost & Pricing: 2.00
Operations: 2.00
Market Experience: 2.00
Quality Standards: 3.00
Business Inputs: 2.00
Timeliness: 3.00
Workforce Skills: 2.50
Workforce Safety: 3.00

In the simulation box on the right side of the page, you will see multiple tabs. For the tab labeled Scenario 1, select *Paxlandia Today* from the CAM dropdown menu. Click on the tab labeled Scenario 2 and select *Past Paxlandia* from the CAM dropdown menu.



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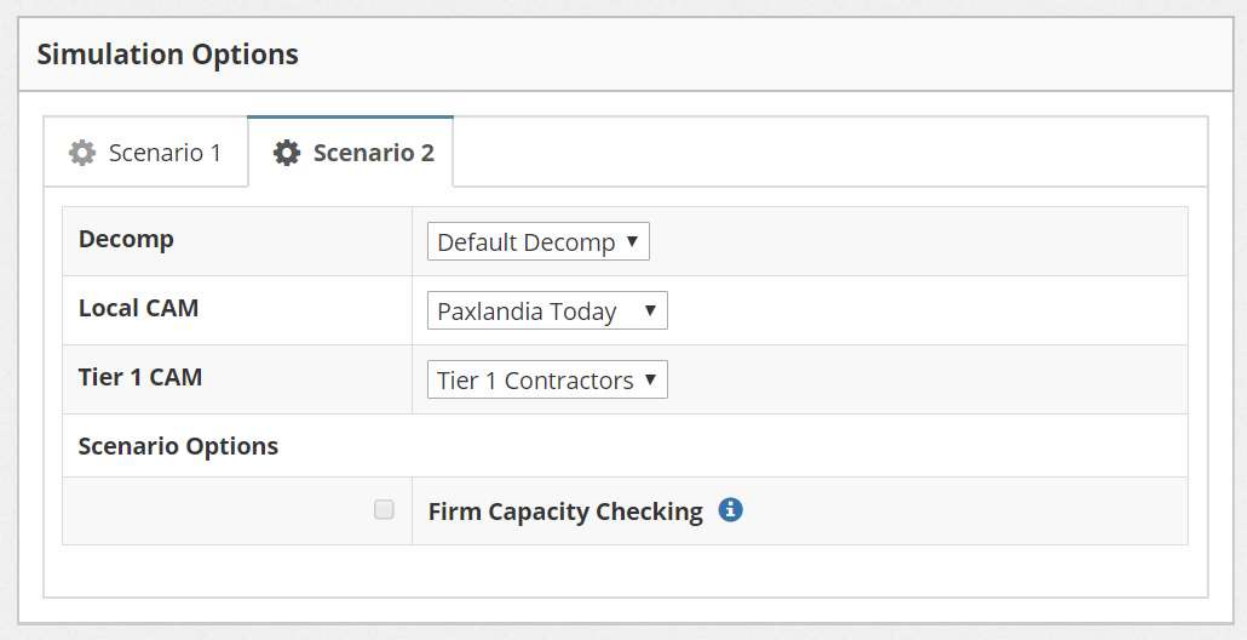

9. After setting the simulation run settings and the correct CAM data for each scenario, click Run Simulation Scenarios to run the model.

It will take a few minutes for the simulation to run. On the output page, use the graphs to compare each scenario and answer the analysis questions.

Please note to make any changes to the project, you will need to click **Claim editor lock.**

Only one person should edit the project for the group.

Local Content Forecasting using DAI SBG's Local Content Optimization Model – Output Page Guidance

At the top of the page, two tables are displayed: Project Summary and Simulation Summary. The Project Summary provides key data from the Project Details page. The Simulation Summary provides key data from the Simulation Run page.

Beyond these two tables, a series of graphs are presented for each scenario. Use this guidance and output variable definition table to support your analysis of the data and respond to the questions.

Local Content Summary

- Bar graph of three key local content metrics for the entire project: Maximum Possible Local Content, Total Local Content, and Locally Awarded Local Content.
- Each variable is given as a figure in USDM and as a percent of total project expenditure.
- Corresponding Definitions: Maximum Possible Local Content (Max Local Content), Total Local Content, Locally Awarded Local Content.

Local Content by Contract Type

- Bar graph breakdown of the Total Local Content variable into three different awarding types: Int. Prime Local Content (International Prime Local Content), Subk Local Content (Subcontracted Local Content), Fullocal Local Content (Full Contract Local Content).
- Each variable is given as a figure in USDM and as a percent of total project expenditure.
- Corresponding Definitions: International Prime Local Content (Int. Local Content), Subcontracted Local Content (Subk Local Content), Full Contract Local Content (Fullocal Local Content).

Local Content by Supplier Category

- Clustered bar chart of maximum possible local content and total local content forecasts for each supply chain category.
- Each variable is given as a figure in USDM.
- Use the Sort dropdown menu to order by Max Local Content (highest to lowest), Total Local Content (highest to lowest), or Supply Chain Category (A-Z).
- Click on the data labels to hide or add variables (only two variables in this graph). The scale of the graph will automatically adjust.

- Corresponding Definitions: Maximum Possible Local Content (Max Local Content), Total Local Content.

Local Content Over Time

- Line graph of total project expenditure, maximum possible local content, total local content, and locally awarded local content over each quarter of the project life.
- Each variable is given as a figure in USDM. Values are given in hover data labels.
- Click on the data labels to hide or add variables. The scale of the graph will automatically adjust.
- Corresponding Definitions: Total Value, Maximum Possible Local Content (Max Local Content), Total Local Content, Locally Awarded Local Content.

Jobs by Local vs Expat

- Bar graph of the total jobs for Local National Employees (Local) or Expatriate Employees (Expat) *associated with the forecasted value of total local content*.
- Each variable is given as a figure in Full Time Equivalents (FTEs).
- Corresponding Definitions: Total Local Jobs, Total Expat Jobs

Jobs by Skill Level

- Bar graph displaying the jobs, *associated with the forecasted value of total local content*, at each skill level: Basic Skilled, Semi-Skilled, Skilled, Management or Professional.
- Each variable is given as a figure in Full Time Equivalents (FTEs).
- Use the Filter dropdown menu to toggle between showing All Jobs (Local National Employees and Expatriate Employees), Local Jobs (Local National Employees only), Expat Jobs (Expatriate Employees Only).
- Corresponding Definitions: Basic Skilled Workers, Semi-Skilled Workers, Skilled Workers, Management and Professional Workers.

Jobs by Supplier Category

- Bar graph displaying the jobs, *associated with the forecasted value of total local content*, in each supply chain category.
- Each variable is given as a figure in Full Time Equivalents (FTEs).
- Use the Filter dropdown menu to toggle between showing All Jobs (Local National Employees and Expatriate Employees), Local Jobs (Local National Employees only), Expat Jobs (Expatriate Employees Only).
- Use the Sort dropdown menu to order by Total Jobs (highest to lowest) or Supply Chain Category (A-Z).
- Corresponding Definitions: Total Local Jobs, Total Expat Jobs

Highest Winning CAM Score by Supplier Category

- Bar graph displaying the highest CAM Score of a local firm that won an award (either through a full or partial contract) in each supply chain category.
- Each variable is given as an indexed score on a scale from 1 (very poor) to 7 (international best practice).
- Use the Sort dropdown menu to order by Highest Firm Score (highest to lowest) or Supply Chain Category (A-Z).
- Corresponding Definitions: CAM Score.

Variable Definitions

Output Variable	Definition
Investment Size	Given in the Project Summary table; The total expenditure, in USD,
Total Value	The total value of expenditure spent by the project owners.
Maximum Possible Local Content	Given the owner's contracting strategy, the maximum value of local content possible if all contracts made available to local suppliers are won in full by local firms.
Total Local Content	The forecasted value of local content that is captured through prime suppliers (international Tier 1 contractors) and local suppliers. Local content is calculated as the sum of salaries paid to local national employees, the value of domestic origin goods, the profits returned to local firms, and the value of the overhead and G&A activities of local firms.
International Prime Local Content	The forecasted value of local content captured through prime suppliers, also known as international Tier 1 contractors. This metric is calculated as the sum of the salaries of local national employees and the value of domestic origin goods purchased for all contracts won by Tier 1 contractors. *Profits, overhead and G&A costs, imported goods, and salaries paid to expatriate workers are not included.*
Locally Awarded Local Content	The forecasted value of local content that is generated through the awarding of full and partial contracts to local suppliers. This metric is calculated as the sum of the salaries of local national employees, the value of domestic origin goods, the profits returned to local firms, and the value of all overhead and G&A activities (including overhead and G&A costs associated with the employment of expatriate workers and imported goods) for all full and partial contracts won by local firms. *The salaries paid to expatriate employees and the value of imported goods are not included.*
Subcontracted Local Content	The forecasted value of local content that is captured through the awarding of partial contracts to local suppliers (i.e. only includes subcontracts). This metric is calculated as the sum of the salaries paid to local national employees, the value of domestic origin goods, the profits returned to local firms, and the value of all overhead and G&A activities (including overhead and G&A costs

	associated with the employment of expatriate workers and imported goods) for all partial contracts won by local firms. *The salaries paid to expatriate employees and the value of imported goods are not included.*
Full Contract Local Content	The forecasted value of local content that is captured through the awarding of full contracts to local suppliers (i.e. does not include subcontracts, only awards that are directly awarded to local firms). This metric is calculated as the sum of the salaries paid to local national employees, the value of domestic origin goods, the profits returned to local firms, and the value of all overhead and G&A activities (including overhead and G&A costs associated with the employment of expatriate workers and imported goods) for all full contracts won by local firms. *The salaries paid to expatriate employees and the value of imported goods are not included.*
Total Local Jobs	The forecasted number of local national full-time equivalents (FTEs) generated by the local procurement of goods and services by prime suppliers (international Tier 1 contractors) and local suppliers. This metric forecasts the number of jobs that are associated with Total Local Content, *not Total Value*.
Total Expat Jobs	The forecasted number of expatriate full-time equivalents (FTEs) generated by the local procurement of goods and services by prime suppliers (international Tier 1 contractors) and local suppliers. This metric forecasts the number of jobs that are associated with Total Local Content, *not Total Value*.
Basic Skilled Workers	Workers with no formal skills and not yet trained other than in initial workplace induction and environment, health, security, and safety considerations.
Semi-Skilled Workers	Workers with a skillset acquired in a short space of time (a few weeks or months). Following short periods of training a laborer may become semi-skilled, thus demonstrating how the Company or Contractor has contributed to building human capacity in-country.
Skilled Workers	Workers with a high level of technical expertise accumulated over a number of years. A skilled worker may have attended a technical college or learned their skill via a formal apprenticeship or on-the-job over many years.
Management & Professional Workers	Management refers to all employees with at least two subordinates. This includes all levels of management from introductory or supervisory managers to CEOs and other executive officers. Professional refers to a member of a recognized profession who has completed related tertiary education and achieved status within a professional body.
CAM Score	An indexed score from 1 (Very Poor) to 7 (International Best Practice) measuring firm competitiveness relative to international standards.