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Rethinking Construction, Workforce Development, and Local Economic Development

Focus on solutions to SDG #8

By Mat Ovenden

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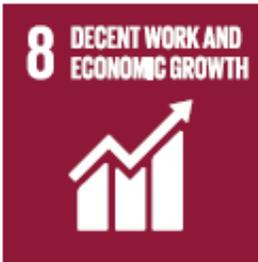
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Rethinking Construction, Workforce Development, and Local Economic Development

By Mat Ovenden

As part of Bechtel's commitment to contribute 100 ideas to support the United Nation's 2030 Sustainable Development Goals (SDGs), this case study examines how large-scale construction projects can be transformative by shifting from local content programs to long-term economic development. This change enables governments to organize business partnerships more strategically, broaden local participation, and promote systemic change across national workforce policies and programs.



SDG #8

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.

SDG Target

Achieve higher levels of economic productivity through diversification, technological upgrading and innovation, including through a focus on high-value added and labor-intensive sectors (8.2).

Problem

Pressure to use local content (e.g., local workers, companies, goods and services) in big construction project can become a source of socio-economic and political tension that can undermine efforts toward strategic planning and partnerships to optimize these programs for long-term economic development.

Solution

Early engagement and coordinated efforts between the government, company, and other key stakeholders can right-size local content policies and programs to spur long-term economic development and advance workforce development.

Summary

According to the McKinsey Global Institute, the world needs to invest around \$3.3 trillion dollars in infrastructure through 2030 to meet economic growth forecasts. A skilled construction workforce is essential to meeting this demand. Construction jobs, such as surveyors, metalworkers and welders are some the most highly demanded jobs in the world today.

For many growing markets, large and mega-construction projects like infrastructure and energy are a catalyst for rapid development. Yet, striking the balance between short-term job creation and longer term specialization, diversification, and supply chain development is a challenging issue for governments, companies and communities.

When government requirements for local content (e.g., local workers, companies, goods and services) are unrealistically high, companies may avoid pursuing a project or investment altogether, or projects can be significantly delayed which can affect not only the quality, cost, and/or duration of such projects, but the longer-term development benefits generated by them.

I. Challenge

Use of local workers and suppliers can be the most efficient way to execute key aspects of a project, while other jobs may require specialized skills not available among nationals. This reality can become a source of socio-economic and political tension when local supply and project demand are not well understood by all stakeholders. This is compounded when there is a “ramping up” to thousands of skilled workers in a very short period compared to what is realistically accessible within the market, or when companies bring their own labor force into the project and leave behind very little that can be transitioned into meaningful local capacities.

When Bechtel was awarded the engineering, procurement and construction (EPC) contracts for all three-liquefied natural gas (LNG) projects on Curtis Island, off the coast of Queensland, Australia, it became the company’s largest greenfield construction project in its century-long history, and part of the largest concentration of private-capital investment in Australia’s history. Adding to the challenge, the projects were to be built over a six-year period on an overlapping schedule.

During the early planning stage, Bechtel along with our three customers and the State Government recognized the significant economic impact the projects would have on the small industrial city of Gladstone (population of about 35,000). Although Gladstone had experienced periods of rapid industrial growth from the 1960s and in the mid-2000s, the region had yet to experience three simultaneous construction projects, side-by-side, on an island with no bridge access.

From Bechtel’s previous experience, the construction phase of a project in a small community can offer immediate employment opportunities and stimulate the local economy in the short-term. However, promoting longer-term benefits of employment and economic development can be more challenging; especially for Bechtel who has committed to meeting a strict construction timeline and budget.

The time-bound nature of this work often limits the ability to develop a sustained approach to advancing the skills of local workers beyond the construction timelines of a project. This is further complicated when it comes to the recruitment and training of apprentices, as they require a very structured framework of on-the-job and technical classroom training to meet their trade requirements. Also, the developed skills should be transferrable to other sectors for continuous employment after the project is completed.

A key risk in delivering the LNG projects—a relatively new resource industry—was the lack of skilled labor readily available to build the plant within the six-year timeframe. This assessment, which was further corroborated by an analysis of the Australian Construction Workforce, enabled Bechtel to determine where and when there may be potential skills gaps in the future. At its peak, Bechtel predicted a combined construction workforce of about 12,000 workers across the three projects.

II. Approach

By understanding the challenge of suitable labor earlier in the planning stage of the projects, a range of training programs, including a unique apprenticeship program, were developed to help fill the predicted gaps later in the construction of the projects. The apprenticeship program offered five trades focusing on training workers in areas such as electrical fitter mechanic, instrumentation and control, boiler making, sheet metal, mechanical fitting and carpentry formwork.

A Centralized Training Team delivered the program and was tasked to ensure consistency across all the projects. Establishing training facilities on the three projects provided greater flexibility between building capability on-the-job and learning in the classroom. Individual mentors and full-time site-based trainers provided the full range of training requirements for each apprentice to successfully complete their required modules, to gain their trade certificate and begin working as a tradesperson on these projects and beyond.

Bechtel also partnered with the National Apprenticeship Program (NAP) as well as Skills Tech (Australian federally-funded training bodies) to deliver accredited training. Formal Recognition of Prior Learning (RPL) was taken into consideration, and gap training was tailored to the individual's needs to complete the required training within the planned timeframe. Recruitment was determined by recognized previous experience, and priority was given to our commitments to build up the local labor before broadening the opportunities state-wide and nationally.

This program enabled adult laborers and trades assistants to return to formal training to complete a trade they had previously started, or to extend their previous trade into an additional skilled trade area. Eligible candidates were typically aged between 25 and 45, and included:

- Diverse professionals who had partially completed an apprenticeship.
- Permanent Australian residents with overseas qualifications, not yet recognized in Australia.
- Ex-members of the defense forces with relevant skills.
- People with other related trade qualifications.
- Trades assistants from the construction and engineering fields.

As part of the program, Bechtel committed to deliver 400 apprenticeship opportunities across the three Curtis Island LNG Projects. This was among the largest single intake of adult apprentices in Australian history.

Some notable outcomes include:

- 436 apprentices were employed across the projects during construction
- 239 were adult apprentices, sourced from the existing experienced labor pool, or were eligible to receive credit for recognized prior learning
- 116 traditional youth apprentices after completing school studies
- 107 were existing employees looking to upskill into a trade
- 72 of the apprentices re-commenced a trade after not completing their initial training
- The apprentice completion rate of 94% far exceeded the national average completion rate of about 52%. This was attributed to, among others, the site training teams, individual training programs, recognition of prior learning to shorten training period.

In addition, 23,000 employees completed accredited training courses during construction, thereby elevating skills for future employment opportunities in the construction industry. The program also used 72 training providers and significantly contributed to filling the skills gap in Australia's construction industry.

Finally, Bechtel received state and national recognition, winning the Queensland Training Award and was a two-time finalist of the Australian Training Awards.

- Queensland Training Awards Region Winner: Employer of the Year 2013
- Queensland Training Awards (state) Winner: Employer of the Year 2013
- National Finalists – Australian Employer of the Year 2013
- National Finalists - Australian Apprentice Employer of the Year 2014

III. Key Learnings

Our efforts on the Curtis Island LNG projects, and many others, generated several key learnings that can support implementation of SDG 8 under the Voluntary National Reviews.

Develop Flexible Policies: Many governments are formulating or have incorporated local content requirements into law. These are critical pieces of legislation that governments should have; however, as the scale and speed of each project can vary, it is important that these policies or legislations balance near-term capacity building with long-term economic growth. Local content programs should be tailored to specific industries and projects and structured around positive reinforcement under a partnership approach.

Establish the Right Targets: Flexible approaches to local capacity building can be challenging given the stakeholder demands to demonstrate rapid progress. Establishing realistic, but meaningful targets around the number of local workers or suppliers to be developed over several years is a practical approach. This should include milestones agreed to, recognized and celebrated by relevant authorities and companies.

Create Local Partnership Networks: There are examples of companies establishing schools, training facilities, or capacity building programs to secure a contract, but then fail to deliver on promises or to properly integrate such training into project delivery. Partnership networks between companies, governments, schools/universities, and training institutions, including affected communities; with agreement on gaps, goals and targets is an effective way to manage expectations and plan beyond the project. This includes expanding existing facilities and introducing new materials and experts to support training platforms that can be used across multiple industries or can be modified later for different skills needed within the industry. Moreover, partnership networks can also “crowd-in” external donors, ancillary industries, investors, and NGOs to align their economic development programs around a common local content vision and plan.

Start the Transition Early: Plan for not just the impacts, but the sustainable outcomes generated from the project. Several years before the project demobilizes from construction to operations, coordinate with the government to begin developing a program that enables local workers and suppliers to transition from construction work and contracts to a new phase driven by market demand.

Maximize and Optimize Local Content: Even when such skills do not exist locally for a project, it is desirable to maximize local workers and suppliers, and where appropriate, optimize relevant capabilities to develop their specialization and diversification. This approach brings benefits beyond the immediate financial ones to a project: (i) indigenous knowledge and know-how; (ii) supportive social interactions with communities; (iii) local workforce/suppliers becoming anchors for future business growth in the region, and (iv) “clusters” of service companies serving as a local supply chain for future projects. Corporate social investments can also be used to supplement workforce or supplier development programs. This may include creating a venture fund to catalyze local entrepreneurship, partnering with local NGOs to build technical competencies, or implementing a training program on savings and tax preparation.