

SETuP – Lessons Learnt Report – Remoteness Challenges



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Lessons Learnt Report: Remoteness Challenges

Project Name: Solar Energy Transformation Program (SETuP)

ARENA Knowledge Category:	Logistical
Knowledge Type:	Construction
Technology Type:	Solar PV
State/Territory:	Northern Territory

Key learnings

SETuP encountered numerous challenges relating to the remoteness of the participating communities, these included:

Safety

- Health services are limited and medical evacuation may be complex
- Police are often not present in communities and community unrest may arise without warning
- Animal risks are increased including: camp dogs, snakes, buffalos, camels, pigs, crocodiles etc.
- Travel risks are higher to due to small aircraft and long driving distances travelled on dirt roads



Left: wild camels are a significant driving risk



Right: highway sign on the Docker River Road

Logistics

- Site inspections and defect rectifications are expensive due to the costs of mobilisation
- Regular Passenger Transport (RPT) is often non-existent or limited and infrequent
- RPTs have limited baggage allowance and won't guarantee carriage of excess baggage
- Consultations often don't go ahead on the scheduled date which results in repeat or rescheduled visits
- Shipping containers are expensive to return to base and returns are often more than the cost of the container
- For many remote communities, bulk material delivery is only possible by barge which can be considerably more expensive than road transport
- Roads are often not constructed for all-weather access which introduces schedule risks in the wet season



Left: road train at Cahills crossing during high tide



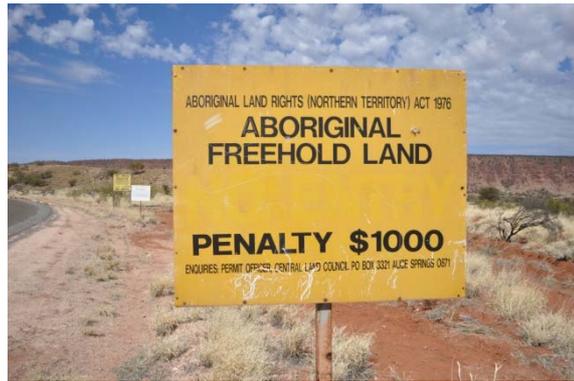
Right: light aircraft chartered transport

Local restrictions

- Volatile substance limitations are in place in many communities: petrol, aerosols, etc., which can be a challenge to accessing essential goods for project delivery
- Alcohol restrictions apply in many communities with severe penalties for non-compliance
- Travel permits are often required to travel to worksites, and routes may be diverted to accommodate for road closures for cultural reasons



Left: restricted area signage



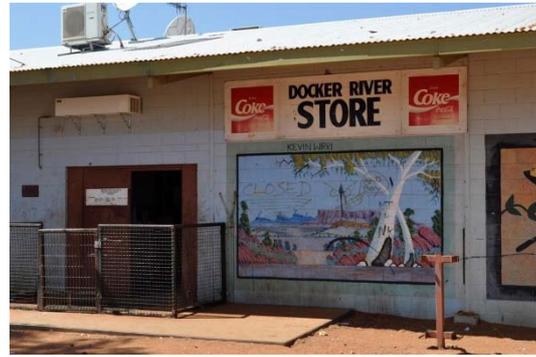
Right: Aboriginal Freehold Land signage

Local Capacity

- Local stores have limited construction tools and equipment in stock, which can create schedule risk if planning does not factor in contingencies for hardware and equipment
- Local specialist labour skills are scarce which limits the ability to source local contractors to rectify defects
- Local inventory of Plant and machinery are very limited and often non-functional or unreliable to use on a project
- Light vehicles are limited, other transport options are often not available
- Project teams need to be self-sufficient as accommodation and food preparation services are often very limited



Left: example of limited facilities



Right: typical remote community store

Telecommunications

- Lack of mobile phone coverage in many areas, those areas with service are often intermittent and unreliable
- Minimal access to office equipment such as printers and scanners which are often not connected to the internet

Skilled staff

- High cost of labour to retain skilled staff to compensate for the remote worksite living conditions, distance from family and lack of recreational facilities; if staff are not adequately compensated these factors often result in an increased turnover of skilled staff

Transit damage

- Due to long periods of transit on unsealed roads, packaging of equipment requires additional attention
- Where limited or no road access requires use of barge transport, careful attention needs to be paid to avoiding water damage that can be incurred



Left and right: Examples of transit damage to switchboards for the SETuP program

Waste management

- High cost of disposing of packaging and waste in communities due to minimal infrastructure and capacity to process levels of waste resulting from such projects
- Handling of hazardous waste such as oil and paints is problematic



Implications for future projects

- Ensure comprehensive health safety and environmental plans are in place
- Ensure emergency communications are in place such as satellite phones
- Leverage contractors and logistics personnel with remote location experience from the planning stage onwards
- Consider including additional cost contingencies and designing “float in” schedules to accommodate unexpected factors while also maintaining delivery milestones
- Consider making available additional spare parts and construction materials on site
- Research local capacity to provide the most suitable accommodation facilities for project teams
- Ensure plant and equipment can withstand challenging transport circumstances
- Ensure compliance with all local requirements such as restricted work areas and volatile substance limitations
- Consider the scale and cost of residual packaging and waste removal for worksite operations
- Call community contacts (e.g. the local council office) before travelling to a community to assess local conditions and any temporary access restrictions.