

AGI 변압기 운송 일정/비용 비교 분석 보고서

(Option 1: 2 Sets SPMT/Beams vs Option 2: 1 Set SPMT/Beams)

Project	Samsung C&T - Independent Subsea HVDC System (Al Ghallan Island / AGI)
Site	AGI Site (Al Ghallan Island)
Document Type	Schedule & Cost Comparative Analysis
Prepared For	SCT Team / Project Stakeholders
Prepared By	Planning & Controls (Draft)
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1. Executive Summary

- 비교 대상: AGI TR Units 1-7 운송에 대한 Option 1(2 sets SPMT/Beams) 및 Option 2(1 set SPMT/Beams) 일정 Baseline 및 비용(이메일 기반 Fast Estimate).
- 일정: Option 1 전체 42 일(26-Jan-26 ~ 08-Mar-26), Option 2 운영 62 일(27-Jan-26 ~ 29-Mar-26) / 전체 65 일(26-Jan-26 ~ 31-Mar-26, Demob 포함).
- 비용(추가비용 기준, 계약 범위 LO/LI, Transportation, Jack-down & Installation 제외): Option 1 USD 236,800 / Option 2 USD 230,100 (차이 USD 6,700, 약 2.9%).
- 핵심 Trade-off: Option 1 은 추가 장비/인력(2nd set SPMT & Crew) 및 추가 Transport Beam(4pcs) 필요하나, 동시 병행으로 전체 기간을 단축하는 구조. Option 2 는 단일 set 운용으로 운영 구조가 단순하나, Trip 병렬화 불가로 기간이 장기화.

2. Inputs, Basis of Comparison, and Exclusions

2.1 Inputs

- Schedule Baseline PDFs (Option 1 / Option 2) – AGI TR Units 1-7, Rev 01 및 Rev 03.
- SPMT/Manpower/Transport Beam 비용 Fast Estimate – 사용자 제공 이메일 본문(Option 1 및 Option 2 비용 산출).

2.2 Exclusions (per estimate)

- LO/LI(Load-out/Load-in) 작업비, Transportation, Jack-down 및 Installation 비용은 계약 범위로 본 비교에서 제외됨.
- Schedule 상 날짜는 예시(Baseline)로 이해하며, Tide/Weather window 및 승인/Permitting 조건에 따라 변동 가능.

3. Schedule Comparative Analysis (AGI Site)

3.1 Summary Metrics

Item	Option 1	Option 2	Delta (Opt1-Opt2)	Remarks
Execution concept	2 sets SPMT + 2 sets Transport Beams	1 set SPMT + 1 set Transport Beams	-	Resource concurrency differs
Overall duration	42 days	65 days (incl. demob)	-23 days	Opt2 operational duration is 62 days
Operational window	40 days (27-Jan-26 ~ 07-Mar-26)	62 days (27-Jan-26 ~ 29-Mar-26)	-22 days	As per schedule baselines

Final TR7 jacking-down 07-Mar-26 29-Mar-26 -22 days Schedule task dates

3.2 High-level Trip Timeline

Trip	Option 1 Sail-away	Option 2 Sail-away	Cargo per trip (baseline)
Trip 1	01-Feb-26	31-Jan-26	TR Units 1-2
Trip 2	10-Feb-26	17-Feb-26	TR Units 3-4
Trip 3	19-Feb-26	06-Mar-26	TR Units 5-6
Trip 4	27-Feb-26	22-Mar-26	TR Unit 7

3.3 Key Schedule Drivers and Constraints

- Option 1: 2nd set SPMT/Beams 활용을 전제로, Port-side 준비(LO/LI 및 Sea fastening)와 Site-side transport/turning/jacking-down 을 병행하는 구조.
- Option 2: 1 set SPMT/Beams 만 운용하므로, Site-side 작업 종료 후 SPMT 를 LCT 로 회송하여 다음 Trip 준비(Port-side) 진행 – 작업이 직렬화됨.
- 공통 제약(스케줄 노트 기준): Load-out/Load-in 은 tide window 및 weather 조건에 영향, Ground compaction/levelling 및 auxiliary equipment(크레인/포크리프트 등) 적기 제공 필요.

4. Cost Detail Report (AGI Site)

4.1 Cost Summary (Fast Estimate)

Cost Item	Option 1 (USD)	Option 2 (USD)	Delta (Opt1-Opt2)	Notes
SPMT equipment hire	96,600	135,700	-39,100	Opt1 is 2nd set only; Opt2 is 1 set
SPMT manpower	67,200	94,400	-27,200	Opt1 is 2nd crew only; Opt2 is 1 crew
Additional transport beams	73,000	0	+73,000	4 pcs, 7.45m beams (one-time)

Grand Total: Option 1 = USD 236,800 | Option 2 = USD 230,100 | Difference = USD 6,700 (≈2.9%)

4.2 Detailed Calculation Basis

- Unit rates (per email): Axle = USD 150/axle/day, PPU = USD 500/day, Supervisor = USD 500/day, Operator = USD 400/day, Rigger = USD 350/day (x2).
- Option 1 hire duration basis: 42 days (aligns with schedule overall duration).

- Option 2 hire duration basis in estimate: 59 days (derived from totals; schedule operational duration shown as 62 days). Supplier charging basis(캘린더/온하이어 기준) 확인 필요.

4.3 Sensitivity (informative)

If Option 2 equipment/manpower is charged for full 62 days at the same daily rate (USD 3,900/day), the total would increase by $(62-59) \times 3,900 = \text{USD } 11,700$ to approximately USD 241,800.

5. Decision Guide / Next Actions

- Schedule criticality 확인: 20 일(또는 22 일) 단축이 프로젝트 핵심 경로에 미치는 영향 (commissioning/energization 등) 정량화.
- Option 1 prerequisite: 추가 Transport Beam(4pcs) 제작/납기(3 주) 및 2nd SPMT set mobilization 가능일 재확인.
- Option 2 prerequisite: Third party supplier mobilization date 및 hire day-count(59 vs 62) 기준 명확화.
- 공통: Tide/Weather window, auxiliary equipment 제공계획, ground preparation 완료 일정, PTW/Access 승인 리드타임을 Baseline 에 통합 반영.

6. References

1. Schedule Baseline PDF - '15111578 - Samsung HVDC - AGI - TR Units 1-7 - 2 sets of SPMT 2 sets of Transport beams (7.45m) - Option 1.pdf'
2. Schedule Baseline PDF - '15111578 - Samsung HVDC - AGI - TR Units 1-7 - 1 set of SPMT 1 sets of Transport beams (7.45m) - Option 2.pdf'
3. Fast estimation email text (provided in chat) - SPMT/Manpower/Transport Beam estimate for Option 1 & Option 2.