

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 (AI Ghallan Island / AGI)
Site	AGI Site (AI 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 1은 추가 장비/인력(2nd set SPMT & Crew) 및 추가 Transport Beam(4pcs) 필요하나, 동시 병행으로 전체 기간을 단축하는 구조. Option 2는 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
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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 ($\approx 2.9\%$)

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 $(62-59)*3,900 = \text{USD } 11,700$ 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.