

Opening the Future of Smart Energy

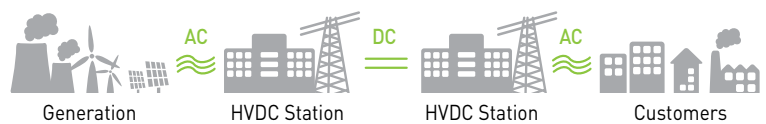
HVDC/FACTS

High Voltage Direct Current Transmission System
Flexible AC Transmission System

HVDC System

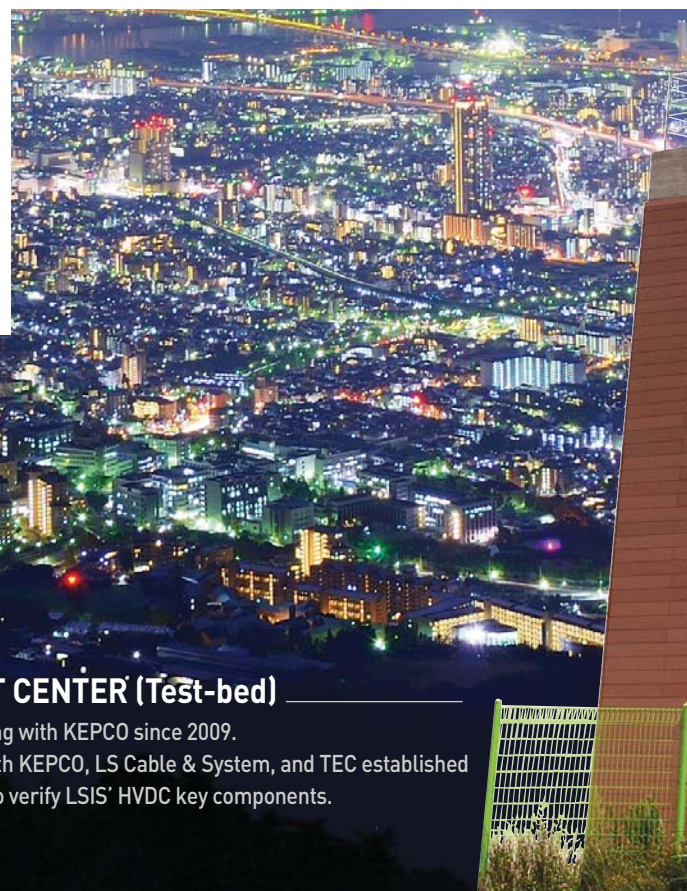
High Voltage Direct Current Transmission System

HVDC system converts AC to DC to transmit long distance and then converts back again to connect with the AC grid with very low loss.



1	2	3
4	5	

1. HVDC Valve
2. Transformer
3. Gas Insulated Switchgear
4. HVDC Control & Protection System
5. Harmonic Filter



Jeju HVDC SMART CENTER (Test-bed)

LSIS has been collaborating with KEPCO since 2009. As a result, LSIS, along with KEPCO, LS Cable & System, and TEC established an HVDC testbed in Jeju, to verify LSIS' HVDC key components.

Long Distance Transmission with Lower Cost

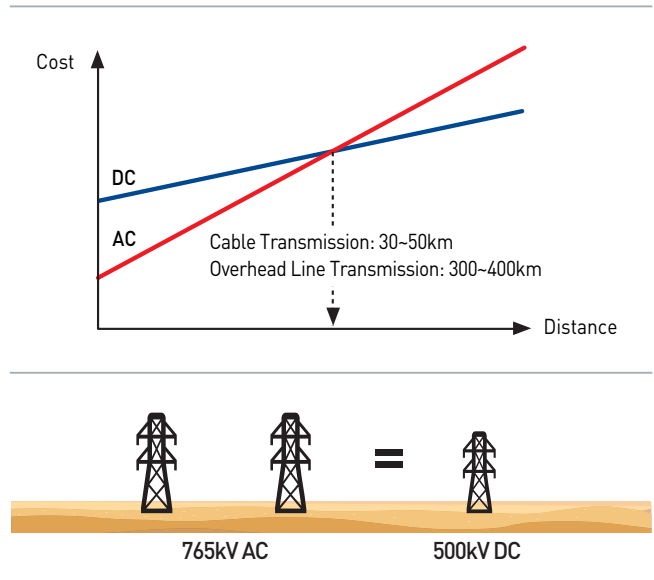
HVDC is the only option for the overhead transmission longer than 300km or submarine/underground 40km thanks to DC characteristics.

Eco-friendly Transmission

HVDC system has lower environmental impact because it requires fewer overhead lines comparing to AC system. The technology is also the key component in the future energy system based on renewable energy sources.

Optimal Grid Management

HVDC can directly interconnect load centers with huge energy sources efficiently. Therefore, negative impact on the grid is minimized. HVDC also improves the performance of AC grid by means of additional controllability.





1	2
3	4 5

1. Harmonic Filters
2. Reactors
3. SVC Valve
4. Capacitor Banks
5. SVC Control & Protection System

FACTS

Flexible AC Transmission System

FACTS consists of power electronics and other static components to increase controllability and power transfer ability of AC network.

SVC

Static Var Compensator

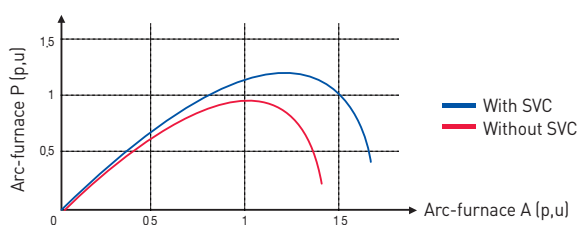
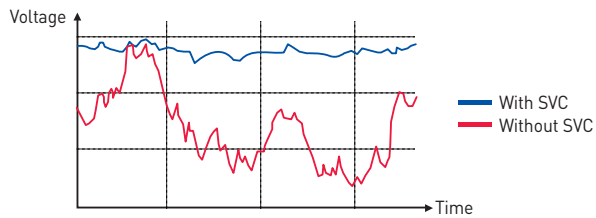
SVC is the most widely employed FACTS device around the world. This system can provide or consume reactive power to stabilize AC grid's electrical quality.



SMART SVC CENTER in Ulsan, Korea

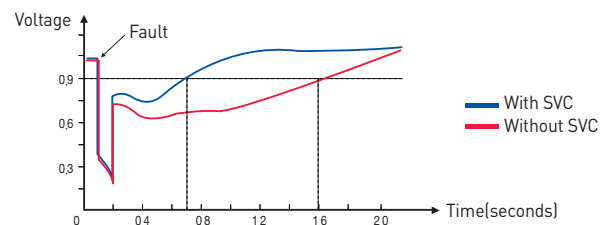
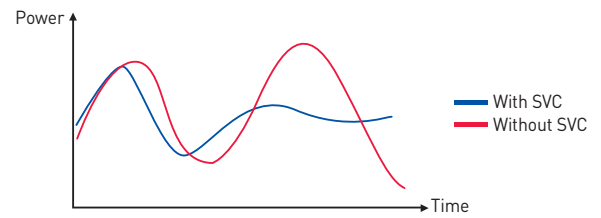
Power Quality Stabilization

In industrial applications, SVC can smooth flicker voltage generated by rapidly varying loads (such as furnaces).



Electrical Grid Management

In transmission applications, SVC regulates grid's reactive power to keep the voltage in normal range.

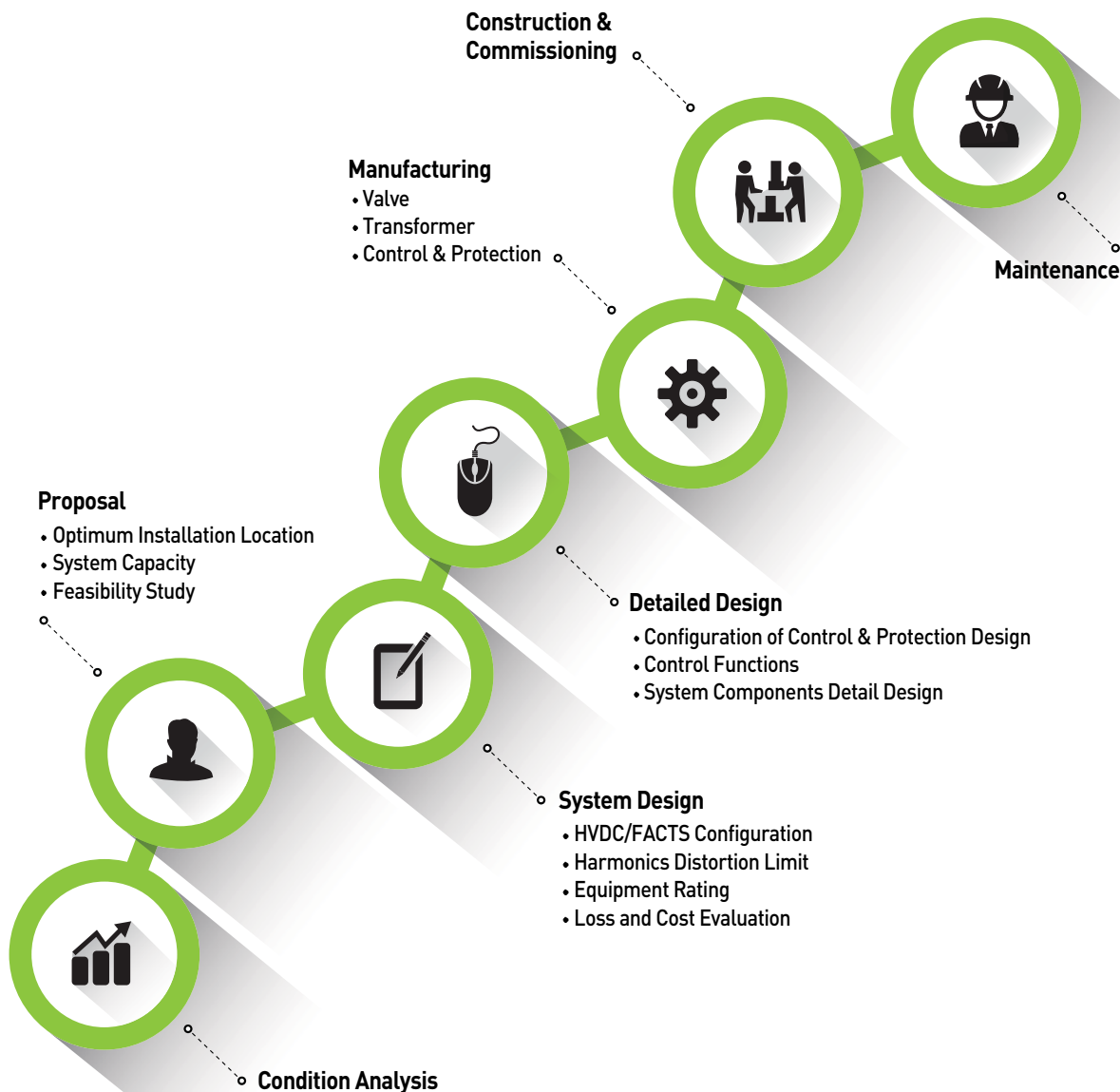




General Process

Total Solution Provider

LSIS provides total HVDC & FACTS solution from system design, equipment design, manufacture & tests, commissioning, and maintenance. Proposal is optimized by customer's needs, use condition, and location.





Busan HVDC Plant

LSIS' Busan HVDC Plant, established in 2011, is the first and only facility in Korea. HVDC & FACTS valve development, production and various DC tests including C&P(Control & Protection) are available.

1	2	3	4
		5	

1. DC Dielectric Test
2. Impulse Test
3. C&P Test
4. Synthetic Test
5. AC Dielectric Test



1	2
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1. Valve Dielectric Test
2. Valve Synthetic Test





LS Tower, Anyang



R&D Campus, Anyang



Ulleungdo

Dokdo



SMART SVC CENTER, Ulsan



Power TR Plant, Busan



Jeju HVDC SMART CENTER



HVDC Plant, Busan



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Specifications in this catalog are subject to change without notice due to continuous product development and improvement

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