Due to global warming, the need to secure an alternative resource has become the international issue. Not like other renewable energy sources, TCP is the high reliable and predictable and continuous energy source as the current pattern and speed can be predicted throughout the year.

Having very strong tidal current speeds, there are many suitable site for the application of TCP (Tidal Current Power) on the west and south coastal region in Korea. The maximum current speed in the south is recorded up to 6.5m/s. Due to the high tidal current speed on the west coast of Korea, numerous tidal current projects are being planned. To extract a significant quantity of power, a tidal current farm with number of devices is required in the ocean.

However, it is important to estimate the potential quantity of energy in the area. Also the realistic quantity that can be extracted is to be investigated. Based on the estimated energy production considering the number of devices and the interactional effects, system type, the water depth and etc., the cost of the development and the benefit from SMP can be estimated. The feasibility study for the 200MW tidal in Incheon, Korea has been performed recently. Based on the actual feasibility study, the procedure and the key points for the application of tidal current power farm are introduced in the paper.

Key words : Tidal current power, Feasibility investigation, Capacity factor, Annual energy production, Availability

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