

새만금 가력배수갑문을 이용한 해류발전단지

*장 경수, 이 정은

Ocean Current Power Parks using Garyuk Draining Sluices of Saemankeum

*Kyungsoo Jang, Jungeun Lee

Two ocean current power parks are suggested in the front and back of the Garyuk draining sluices of Saemankeum in Korea. They are characterized by installing a plurality of ocean current turbine generators which are arranged in five rows respectively in the land-side ocean current power park behind the Garyuk draining sluices and in the sea-side ocean current power park before the Garyuk draining sluices, generating electricity using the ocean current flowing through the Garyuk draining sluices in the ebbs and tides of Yellow sea. The potential energy of tidal difference of 2.611m at neap in Saemankeum can be converted into the kinetic energy of high speed ocean current via the Garyuk draining sluices which makes it possible to run the ocean current power parks on a large scale. The total facility capacity of two ocean current power parks that consist of 240 ocean current turbine generators with 4m diameter of turbine blades is about 134MW, and the expected total annual power output is about 586GWh.

Key words : Ocean current power park(해류발전단지), Ocean current turbine generator(해류발전기), Tidal current power(조류발전), Barrage(방조제), Saemankeum(새만금)

E-mail : * dongsanjang@hanmail.net

파랑 역추산 자료로부터 추정된 우리나라 남부해역의 파력 부존량 연구

*김 건우, 정 원무, 박 진순, 이 광수

Analysis of Wave Power Resources in the Southern Sea of Korea estimated by Using Hindcasted Wave Data

*Gunwoo Kim, Weonmu Jeong, JinsoonPark, Gwangsu Lee

In this study, the wave power resources at the southern sea of Korea were estimated by using the hindcasted wave data of previous researches. The used data were wave heights, periods and directions which were hindcasted around the Korea peninsular from 1979 to 2003. The spatial resolution of the hindcasted data is $1/6^\circ$ (about 18 km). In winter, the northwest monsoon increase the wave power, while the wave power around Korea peninsular is very small in spring. The maximum value of the annual mean wave power is about 13 kW/m at Gageo-do, Heuksan-do and western region of Jeju-do, while those at the southern sea of Korea is only 4 kW/m, which is relatively small. The wave power at Korean east sea is lower than that of Korean southern sea. We obtained the wave resources information, in a fine grid, at Gageo-do, Heuksan-do, and western sea of Jeju-do, by solving SWAN model with the boundary conditions of hindcasted wave data.

Key words : Wave power resources(파력 부존량), Southern Sea of Korea(한국 남부해역), Hindcasted wave data(파랑 역추산 자료)

E-mail : * gwkim@kordi.re.kr