

1th YEAR

OKTOBER 1926

NUMBER 1

The Shannon Power development.

Since the establishment of the Irish Free State, the country has been endeavouring, as are most other independent States, to acquire economic freedom and to restrict imports as much as possible. This restriction is more easily attained in the case of

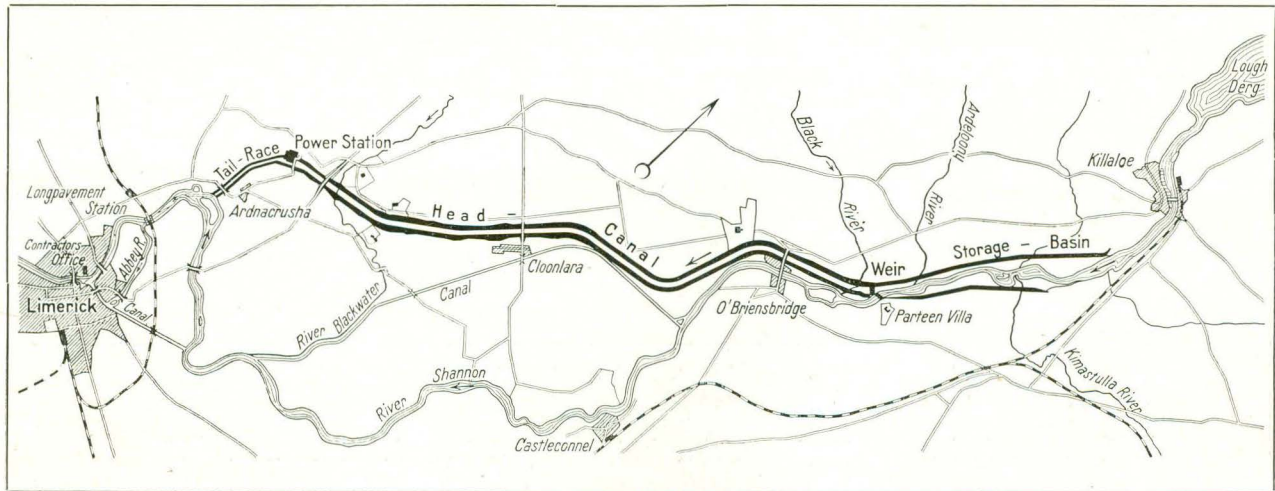
coal than in the case of most other imports. The reason for this is, that with coal its use as a producer of power is the ruling factor and not the material itself as with other raw materials.

Other natural resources such as oil and especially



Unloading of steamers in Limerick Harbour.

ELECTRICITY SUPPLY BOARD
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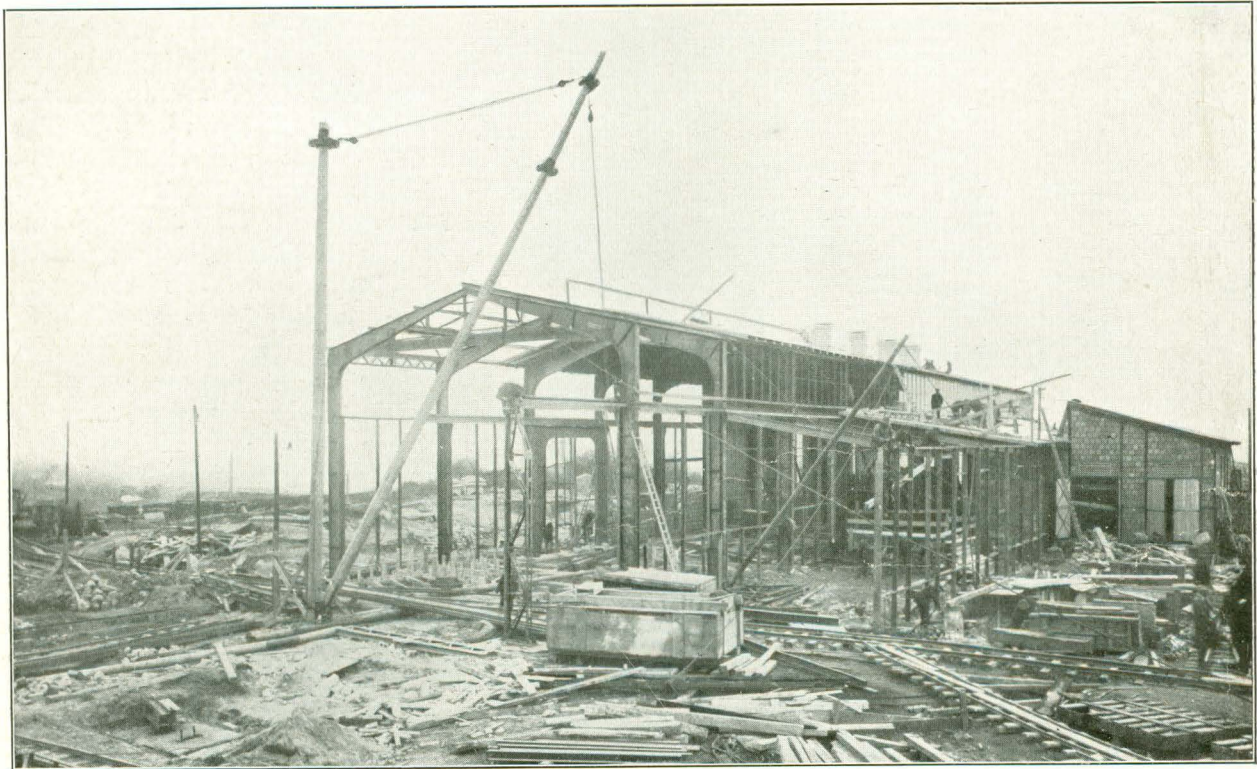


General Plan.

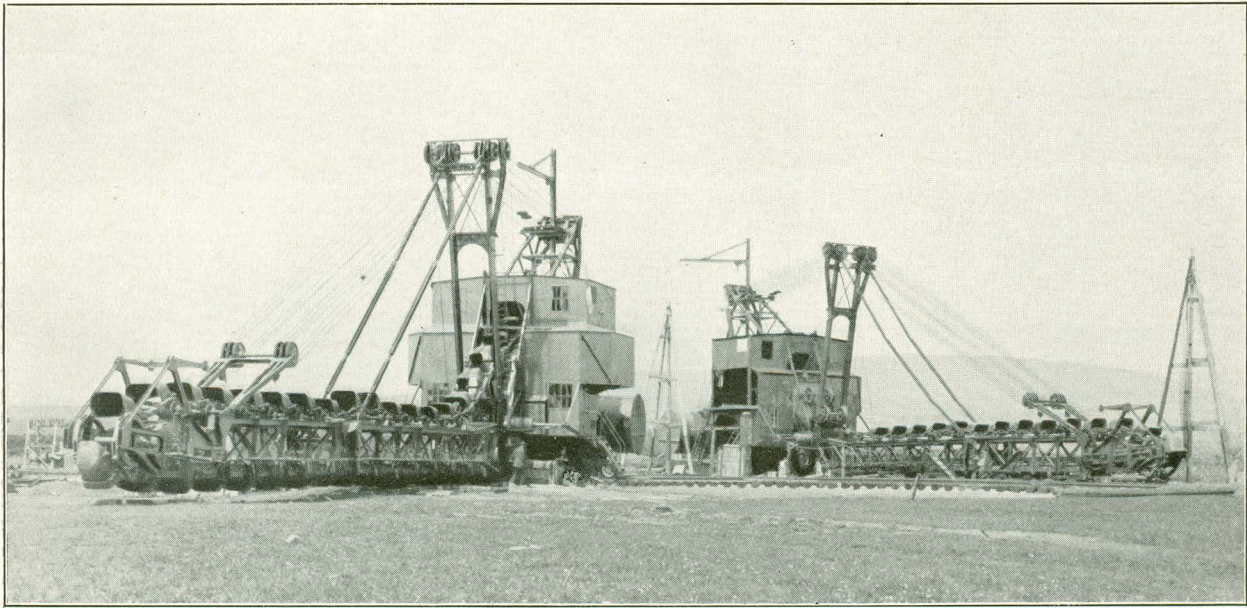
water also produce power and the latter is available in most countries. Considerable attention has been recently directed to water power in Ireland, and several schemes were prepared for the utilisation of the water power of the Shannon, which is the largest river in the country.

All these schemes only proposed to make use of a short stretch of the river, and did not attempt to develop all the possibilities which the Shannon offers. The whole fall of the Shannon which can

be exploited economically, is concentrated on a length of about 10 miles. This is a great advantage and makes it possible to produce sufficient power to satisfy the demands of the whole country for many years by means of one Power Station. According to the scheme of the Siemens-Schuckertwerke which is now being carried out, a weir is being built below Lough Derg about 4 miles south of Killaloe. This weir will raise the River Shannon to the level of Lough Derg and divert the water



Installation of Power Station.

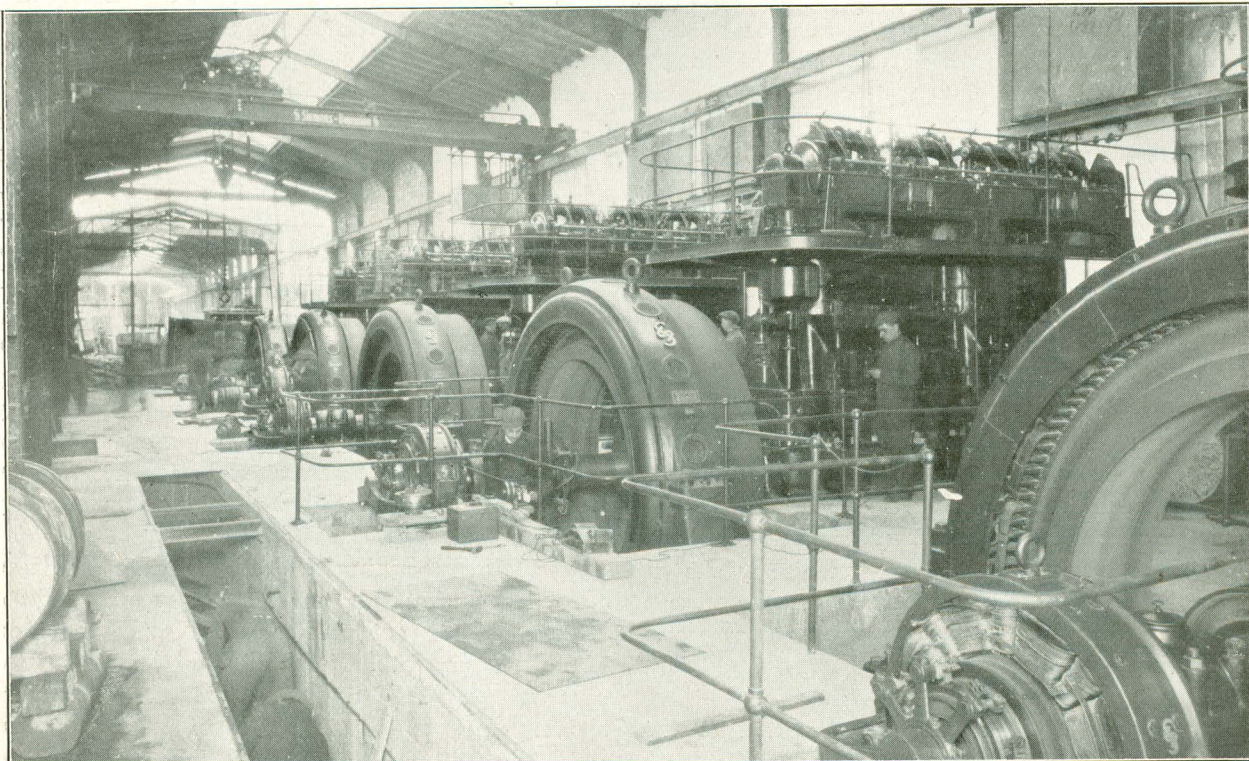


Erection of 2 Electric Bucket Dredgers.

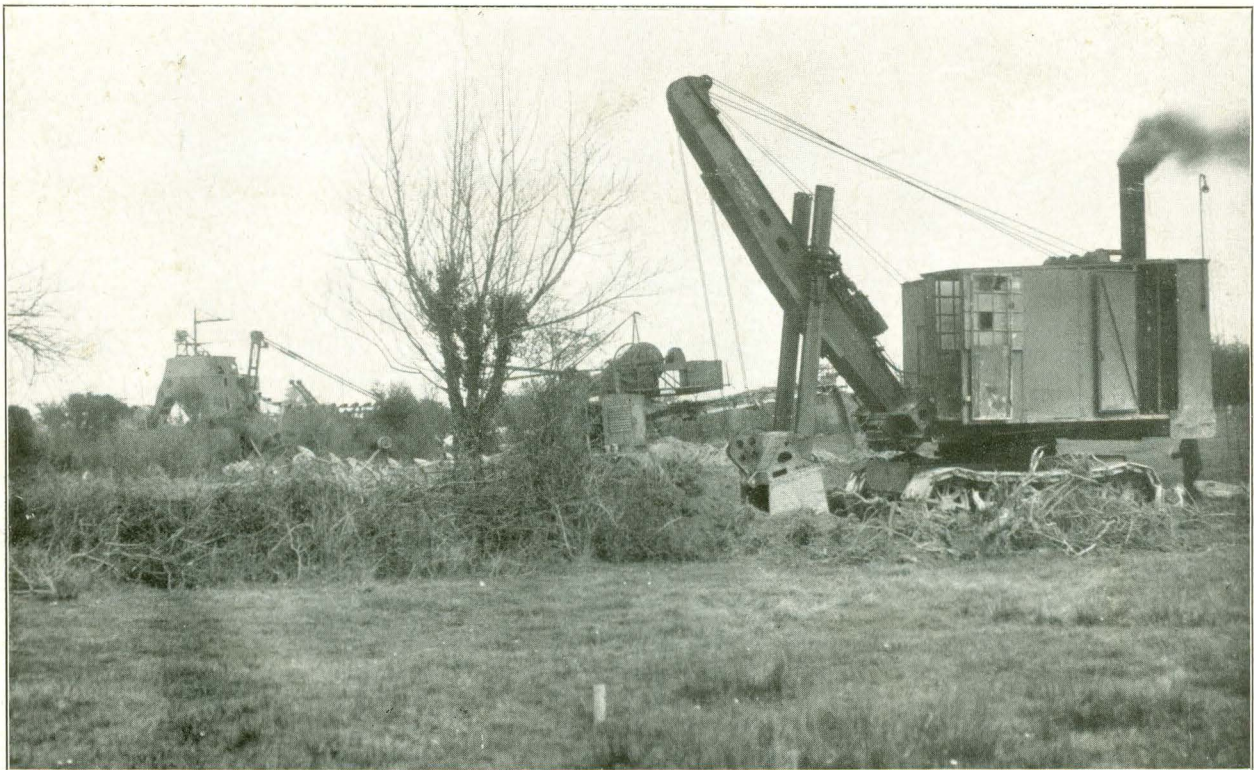
along the Head Race Canal $11\frac{1}{2}$ kilometres long to Ardnacrusha where the Power House is to be built. Six turbines are to be put in for the full development with a combined capacity of 180,000 H. P. At present it is only proposed to erect three turbines, as 90,000 H. P. is considered sufficient to

supply the demands of the Irish Free State in the near future. A Tail Race Canal $2\frac{1}{4}$ kilometres long will conduct the water from the Power House into the River Shannon.

It is also proposed to make use of the Head Race and Tail Race Canals for navigation purposes,



Interior of Power Station.



Two Steam Shovels excavating.

and locks are to be put in at the Power Station in order to surmount the maximum fall of 32 metres.

Another important advantage of the present scheme is that the water storage of the 3 lakes, Lough Allen, Lough Ree and Lough Derg, through which the Shannon flows, is being utilised. The present total storage possibility of these 3 lakes is 324 million cbm. This can be increased to 827 million cbm by building higher embankments, raising the weir, and building new weirs at the outlets of Lough Allen and Lough Ree.

The electric current will be transmitted to Dublin and Cork at a voltage of 100,000 and to the rest of the country at a voltage of 38,500. Further the current will either be directly transformed to 380/220 volts or else transmitted to distant localities at 10,000 volts, and then transformed down.

The Civil Engineering part of the Contract given to the Siemens-Schuckertwerke was signed in August, 1925. The Siemens-Bauunion immediately started the preparatory work on the sites and at the present time considerable excavation work has been done at the Weir, on the Head Race, at the Power Station and on the Tail Race.

Two movable oil cranes were erected at the

Limerick Docks to unload ships bringing the necessary plant from Germany. These cranes were made to run along tracks on the quays. For the unloading of the heavier plant an electric Derrick crane with a capacity of 20 tons was used.

A temporary Power Station with 9 Diesel engines of a total power of 4,180 H. P. was erected to supply current for the building sites. The current is generated at a voltage of 400. It is then transformed to 17,000 volts and transferred to the building sites where it is transformed to 3,000 or 380 volts as required.

Excavation for the permanent Power Station is done by a steam Bucket dredger with a capacity of 300 cbm per hour. A steam dredger was only used so as to enable excavation work to begin before the electric power was available. Five electric dredgers of similar capacity are excavating the Head Race.

Apart from these bucket dredgers and of 7 smaller caterpillar bucket dredgers (latter are used for the removal of top soil), 13 steam shovels some on caterpillars and others on rails, and which have a capacity of either 2,1 or $\frac{1}{2}$ cbm are in use. The steam shovels are used for excavation of earth and rock.