the costs of installed mains of about 6–8 in. diameter (150–200 mm) and upwards with their capacity increase for heat transport, the variation is impressively small. In schemes having relatively large areas of supply, the total mains-related capital costs (exclusive of any service connections) will be dominated by the costs of these larger mains and, in these instances, the ratio of the total length of mains network to the total quantity of transported heat will therefore be a valuable guide of scheme economy.

The heat demand per unit area can be another important factor in determining scheme economics for a given supply area on the basis of transport distances. However, the minor variations in the heat transport costs (in terms of capital investment) between the larger mains sizes, means that the costs for larger distribution network schemes can be held to be roughly proportional to the average distance over which a unit of heat is to be transported.

Fig. 2 shows the approximate costs of installed twin mains of the prefabricated and pre-insulated type, as of mid-1981 in Denmark.

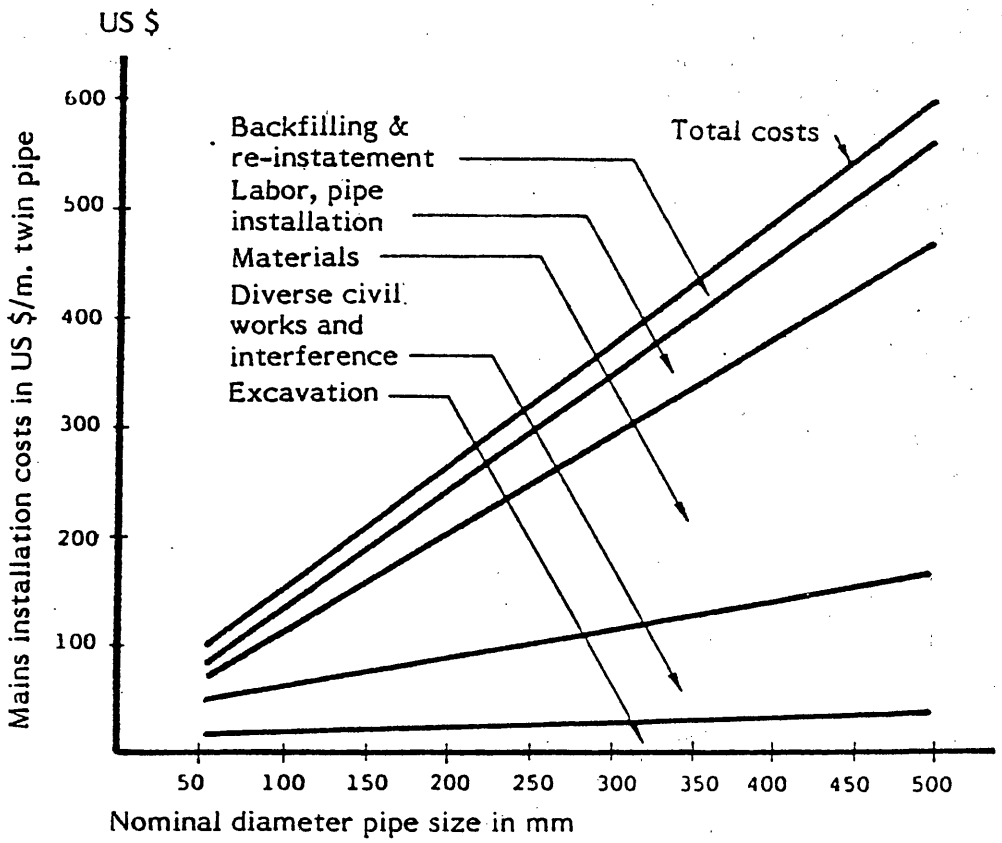

Fig. 2. Approximate costs of twin pre-fabricated mains installed mid-1981, Denmark

Cost influences of transport distances

Where cheap heat is available, it is necessary to investigate the distance over which it is viable to transport this heat. It is easy to be convinced of the viability of transporting very large heat quantities (i.e. 100–150 MW or more) over relatively long distances. There may be more doubt where a heat/power station is to supply a smaller area, as to what maximum length of transmission main is still a viable proposition.