

also, is the £1 per ton bonus to encourage this industry sanctioned by the authority of the Government? If so, will the Government extend the bonus to cover 20,000 tons of iron produced from New Zealand iron-ores? If so, we do not require any such bonus or any part of it until 2,000 tons have been produced, and not until it is satisfactorily proved the industry is established on a sound and profitable basis.

The weight of your influence and co-operation will oblige. Urging the matter to prompt reply from the Government,

W. F. Massey, Esq., M.H.R.

I am, &c.,

ALFRED S. MINETT.

SIR,—

Auckland, 14th June, 1895.

I have the honour to enclose with this a certified copy of a letter received from Mr. Frederick Siemens *re* the New Zealand ironsand, and I think you will agree with me in the belief that it is a most interesting and highly important document. I am informed by the recipient of Mr. Siemens's letter that a large sum of money is available for the development of the iron industry in New Zealand if encouragement and due facilities for its development are granted by the New Zealand Government.

So far as I can learn from conversation with the interested parties, they require a bonus of, say, £1 per ton on 20,000 tons of iron manufactured from the raw material in New Zealand, but would not require any such bonus or any part of it until 2,000 tons had been produced, and not until it was satisfactorily proved that they had established the industry of producing iron upon a sound and profitable basis.

I am further informed that it will be necessary to the success of the undertaking for the Government to set aside a large area of "some" foreshore where the ironsand abounds, for the sole use of those who undertake the works, and to grant an extended lease of the same for the purpose indicated.

I may say that the matter has been represented to me by Mr. S. Hesketh (Hesketh and Richmond), and he appears to be fully satisfied with the *bona fides* of the affair.

I have, &c.,

The Hon. the Minister of Mines, Wellington.

F. LAWRY.

10, Queen Anne's Gate, Westminster, London, S.W.,

10th January, 1895.

DEAR SIR,—

Following my letter of the 22nd November last, I have the pleasure to inform you that I have examined the samples of ironsand, artificial iron-ore, &c., you were good enough to send me. I am already well acquainted with the black ironsand you refer to, but yours, containing only 2 to 4 per cent. titanium, is better as an iron-ore than any I have yet seen.

Your artificial iron-ore, both mechanically and chemically, seems to me very well suited for the blast furnace, and the iron produced (sample of which you sent me) is excellent in quality, and, no doubt, very pure chemically.

The "direct process" of my own, and that of my brother, the late Sir William Siemens, are not yet sufficiently advanced to enable me to recommend their adoption on a commercial scale, as hitherto it has been found such "direct processes" are at some disadvantage as compared with the blast furnace and puddling furnace, or the blast furnace and the Siemens open-hearth steel melting furnace, as regards the cost of production. I think the combined processes of (1) smelting in the blast furnace, and (2) reducing the artificial iron-ore in my open-hearth steel furnace in contact with a bath of molten pig-iron made in process (1) would be the most economical.

The new form Siemens furnace, which costs less money to build (only about one-half) than the ordinary form Siemens furnace (with four regenerators and separate gas-producers), would be very suitable for this process, for which I should be glad to furnish you with a complete set of working drawings on terms to be arranged.

Enclosed you will find description circular on this furnace, which has been adopted in this country, and on the Continent of Europe, for making steel castings, steels of varying tempers, and soft steel or ingot iron. The same type of furnace has been very largely applied also for reheating ingots, blooms, billets, iron piles, &c., and I am doing a regular business at these offices in supplying drawings for such furnace, and setting them to work in England, Belgium, France, Spain, &c.

I should propose that the pig-iron made in the blast furnace from your artificial ore be melted with 30 per cent. of its weight in my open-hearth furnace for the production, in ingots, of soft steel, for bars of all sections, forgings, &c. The whole of the iron in that 30 per cent. of ore will be reduced to the metallic state very cheaply, and if carbon is also added to the ore-mixture it is probable as much as 50 per cent. of ore could be treated (in a 10-ton charge, 5 tons of pig-iron and 5 tons artificial iron-ore).

I could supply you at the most moderate prices with the materials for the Siemens open-hearth steel melting furnace, and of the mill for rolling the ingots so produced direct into merchantable bars. It is very probable also that I could arrange for expert workmen to go out to work the new plant.

If the combined processes of the blast furnace and the Siemens open-hearth furnace as suggested does not meet with your approval, perhaps I can recommend to you the best and most reliable "direct process," although in this country I do not think it would compete in cost of production with the blast furnace, and the well-known processes for treating the pig-iron produced. To enable me to do this, however, you should send me, say,  $1\frac{1}{2}$  tons of ironsand,  $\frac{3}{4}$  tons of the fluxing material, and a few hundredweights of the artificial iron-ore (if you have any in stock), freight paid to this address. I would get these materials treated by a direct process, and afterwards report to you upon the results; so that you could see if it would pay in your country or not.