

The invention relates to ferrous metallurgy, namely – to a method for producing iron-carbon smelt and a plant for implementation thereof. A plant comprises melting furnace with extended top part, connected with chamber of direct reduction of iron-containing material by pipeline through collector for dust gathering, at that said chamber has general wall with chamber of preliminary preheating of iron-containing material, which, correspondingly are equipped with mixing chamber and ignition chamber. The chamber of preliminary preheating is connected with pipe heat exchanger. The melting zone of furnace is equipped with plasmatrons and burner nozzles, extended chamber and storage device are equipped with plasmatrons, and collector for dust gathering is equipped with burner nozzles. In extended chamber the iron-carbon smelt is effected by plasma stream in process it obtaining for depuration of gas stream discharge from melting zone of furnace from smelt drops and dust-like fraction. The composition and temperature of discharge gas in collector are corrected by supply of natural gas, air or water to values of reducing gas through burner nozzles. Obtained reducing gas is directed into chamber of direct reduction and then through mixing chamber and ignition chamber – into chamber of preliminary preheating of starting iron-containing raw. The waste gas is used in heat exchangers for the heating of oxygen-containing and natural gas, which is supplied on burning nozzles of melting furnace. The invention provides possibility of maximal use of potential of reducing gas, used in plasma melting furnace that results to decreasing of general power consumptions and minimal effect on environment.