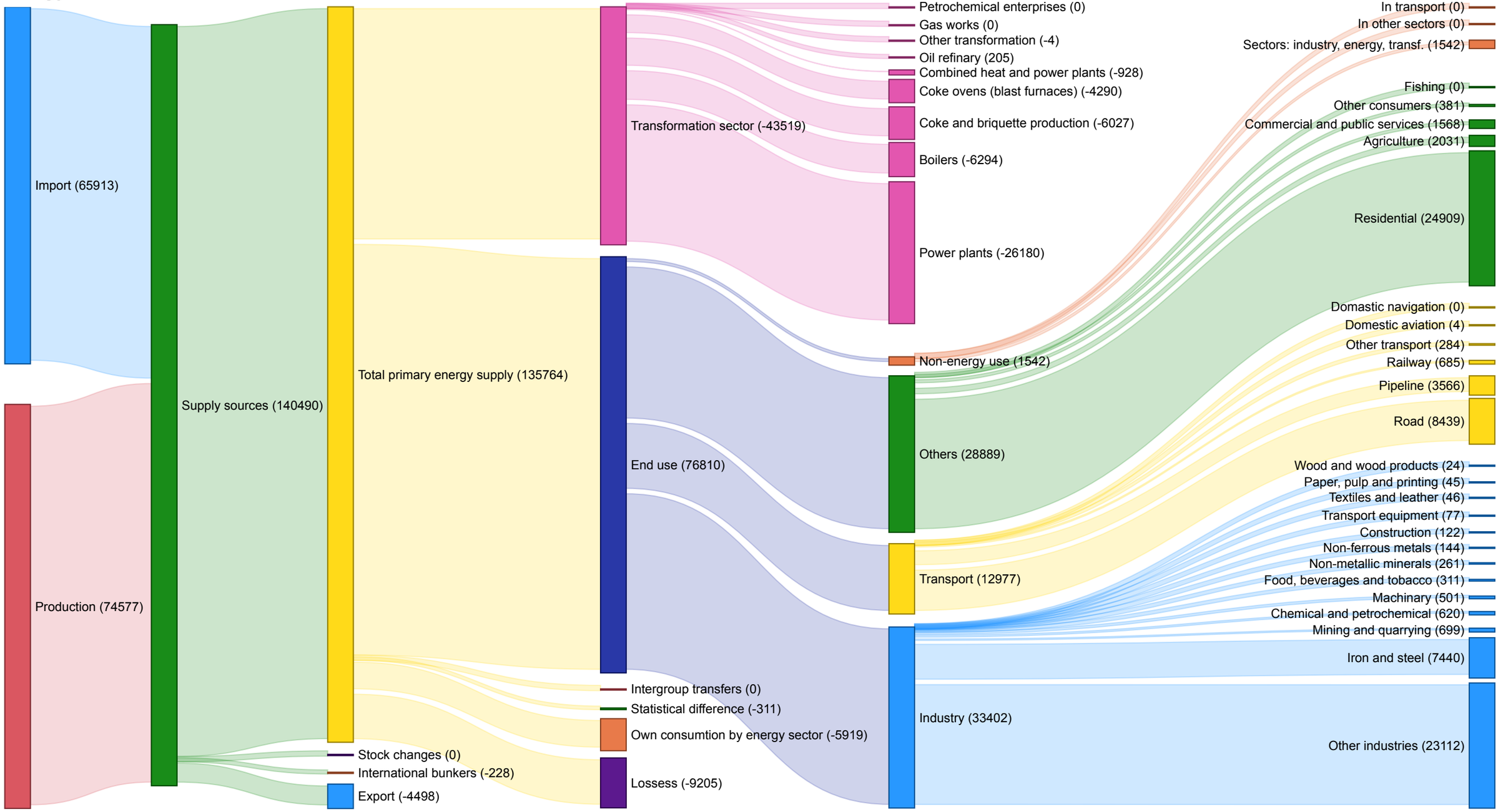**Energy flows**, th. toe, 1998