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Net zero energy use. The goal sounds simple and is presented excessively in variations all over the world. Major advantage of the Net Zero Energy Building (Net ZEB) concept is – on the first look – the absence of energy performance indicators such as kWh/m² with the need to set agreed energy limits and reference areas. This simplicity is a major background for the high political and public acceptance of the wording. In general a conventional building might be called Net ZEB as long as the annual energy needs or the associated carbon emissions are balanced by credits from excess energy feed into the grid. Within the IEA activity "Towards Net Zero Energy Buildings" requirements and performance criteria adding to the annual balance have been discussed and analyzed. A major issue was the discussion of the various forms of temporal mismatch between energy needs and energy generation as well as the mismatch between the type of energy imported to the site (e.g. natural gas + electricity) compared to the type of energy exported to grids (e.g. electricity only). The paper reports on the analysis of example buildings concerning the various levels of mismatch and concludes with a proposal, how to integrate the mismatch aspect as criteria within a harmonized Net ZEB definition framework and methodology.