Balance of system wikipedia

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(Balance of plant),,,??,[1][2][3]?

The balance of system (BOS) encompasses all components of a photovoltaic system other than the photovoltaic panels.[1] This includes wiring, switches, a mounting system, one or many solar inverters, a battery bank and battery charger.

Other optional components include renewable energy credit revenue-grade meter, maximum power point tracker (MPPT), GPS solar tracker, Energy management software, solar concentrators, solar irradiance sensors, anemometer, or task-specific accessories designed to meet specialized requirements for a system owner. In addition, concentrated photovoltaics systems require optical lenses or mirrors and sometimes a cooling system.

In addition, ground-mounted, large photovoltaic power station require equipment and facilities, such as grid connections, office facilities, and concrete.[2] Land is sometimes included as part of the BOS as well.

A similar term to balance of system is "balance of plant (BOP)" which is generally used in the context of power engineering and applies to all the supporting components and systems of the power plant which are needed to produce the energy. These may include suitable transformers, inverters, cabling, switching and control equipment, protection equipment, power conditioners, support structures, etc., depending on the type of plant.

Cost of balance of system will include the cost of the hardware (and software, if applicable), labor, permitting Interconnection and Inspection (PII) fees, and any other fees that may apply. For large commercial solar systems, the cost of BOS may include the cost of land and building, etc. The cost of BOS can be about two thirds of the total cost.

The sense of balance or equilibrioception is the perception of balance and spatial orientation.[1] It helps prevent humans and nonhuman animals from falling over when standing or moving. Equilibrioception is the result of a number of sensory systems working together; the eyes (visual system), the inner ears (vestibular system), and the body"s sense of where it is in space (proprioception) ideally need to be intact.[1]

The vestibular system, the region of the inner ear where three semicircular canals converge, works with the visual system to keep objects in focus when the head is moving. This is called the vestibulo-ocular reflex (VOR). The balance system works with the visual and skeletal systems (the muscles and joints and their sensors) to maintain orientation or balance. Visual signals sent to the brain about the body"s position in relation to its surroundings are processed by the brain and compared to information from the vestibular and skeletal systems.

When the sense of balance is interrupted it causes dizziness, disorientation and nausea. Balance can be upset by M?ni?re"s disease, superior canal dehiscence syndrome, an inner ear infection, by a bad common cold affecting the head or a number of other medical conditions including but not limited to vertigo. It can also be temporarily disturbed by quick or prolonged acceleration, for example, riding on a merry-go-round. Blows can also affect equilibrioreception, especially those to the side of the head or directly to the ear.

Most astronauts find that their sense of balance is impaired when in orbit because they are in a constant state of weightlessness. This causes a form of motion sickness called space adaptation syndrome.

There are five sensory organs innervated by the vestibular nerve; three semicircular canals (Horizontal SCC, Superior SCC, Posterior SCC) and two otolith organs (saccule and utricle). Each semicircular canal (SSC) is a thin tube that doubles in thickness briefly at a point called osseous ampullae. At their center-base, each contains an ampullary cupula. The cupula is a gelatin bulb connected to the stereocilia of hair cells, affected by the relative movement of the endolymph it is bathed in.

After any extended rotation, the endolymph catches up to the canal and the cupula returns to its upright position and resets. When extended rotation ceases, however, endolymph continues, (due to inertia) which bends and activates the cupula once again to signal a change in movement.[2]