Using Renewable Energy for Our Trains

About half of the JR East trains in the Tokyo area run on electricity generated by hydroelectric power plants, which has lower environmental impact. JR East uses the hydraulic power of the Shinano River to generate electricity in its own power plant in Niigata Prefecture.

Kenji Naito, the general manager of the power station, says, “Accurate forecasts of water amounts at these hydraulic power plants are essential since some of the electricity is used to serve the railway’s passengers.” The output at Kawasaki Thermoelectric Power Plant, which generates about 1/3 of power needs, is adjusted depending on hydroelectric power plant output to maintain the proportion of clean energy at the highest possible level. To estimate the next day’s energy production, rainfall data along the Shinano River as well as its tributaries is added to the precipitation data to forecast the amount of available water. Such forecasts are also required to maintain the water level of Miyanaka Intake Dam. The amount of water taken from the dam is adjusted to maintain a stable water level.

Power generation via natural means involves constant care such as to clean up floating debris and other rubbish that the river water carries into the dam. Driftwood arriving at the dam used to be discarded is now recycled as wood chips and compost.

Now that you know where the electricity for your commuter trains comes from, you will probably feel different when you ride them next time.