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NeTrainSim SIMULATION SUMMARY

Version: 0.1.2

Simulation Time: 0:00:00:00 (dd:hh:mm:ss)
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## + NETWORK STATISTICS:

|                                                                         |            |
|-------------------------------------------------------------------------|------------|
| _ Network Name                                                          | Qatar      |
| _ Nodes Count                                                           | 8          |
| _ Links Count                                                           | 7          |
| _ Total Lengths of All Links (meters)                                   | 286,500    |
| _ Total Lengths of All Links with Catenary (meters)                     | 286,500    |
| _ Total Signals                                                         | 14         |
| _ Total Number of Trains on Network                                     | 1          |
| _ Percentage of Links with Catenaries to All Links (%)                  | 100        |
| _ Catenary Total Energy Consumed (KW.h)                                 | 30,337.604 |
| _ Average Catenary Energy Consumption per Net Weight (KW.h/ton)         | 63.203     |
| _ Average Catenary Energy Consumption per Net ton.km (KW.hx10^3/ton.km) | 220.605    |
| _ Catenary Energy Consumed (KW.h)                                       | 30,337.604 |
| _ Catenary Energy Regenerated (KW.h)                                    | 0          |

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## + AGGREGATED/ACCUMULATED TRAINS STATISTICS:

## |-&gt; Train Information:

## |-&gt; Locomotives Summary:

|                                               |                           |
|-----------------------------------------------|---------------------------|
| _ Number of Locomotives/Cars                  | 1/20                      |
| _ Locomotives (Technology, count)             | { Electric Locomotive: 1} |
| _ Operating Locomotives to End of Trains Trip | 1                         |

## |-&gt; Cars Summary:

|                       |                  |
|-----------------------|------------------|
| _ Cars Count          | 20               |
| _ Cars (Types, count) | { Cargo Car: 20} |

## |-&gt; Moved Commodity:

|                           |         |
|---------------------------|---------|
| _ Total Moved Cargo (ton) | 480     |
| _ Total ton.km (ton.Km)   | 137,520 |

## |-&gt; Route Information:

|                                 |         |
|---------------------------------|---------|
| _ Trains Reached Destination    | 1       |
| _ Trains Total Path Length (km) | 286.500 |

## |-&gt; Train Performance:

|                                                                    |            |
|--------------------------------------------------------------------|------------|
| _ Operating Time                                                   | 0:02:43:42 |
| _ Average Speed (meter/second)                                     | 29.1692    |
| _ Average Acceleration (meter/square second)                       | -0.0164    |
| _ Average Travelled Distance (km)                                  | 286.500    |
| _ Consumed and Regenerated Energy:                                 |            |
| _ Total Net Energy Consumed (KW.h)                                 | 30,336.444 |
| _ Total Energy Consumed (KW.h)                                     | 30,337.604 |
| _ Total Energy Regenerated (KW.h)                                  | 1.160      |
| _ Average Net Energy Consumption per Net Weight (KW.h/ton)         | 63.201     |
| _ Average Net Energy Consumption per Net ton.km (KW.hx10^3/ton.km) | 220.597    |
| _ Tank Consumption:                                                |            |
| _ Total Fuel Consumed (litters)                                    | { }        |
| _ Battery Consumption:                                             |            |
| _ Total Energy Consumed (kW.h)                                     | 0          |



|                                                                                |                           |
|--------------------------------------------------------------------------------|---------------------------|
| _ Total Energy Regenerated (kW.h)                                              | 1.160                     |
| _ Total Net Energy Consumed (kW.h)                                             | -1.160                    |
| _ Average Net Energy Consumed per Net Weight (kW.h/ton)                        | -0.002                    |
| _ Average Net Energy Consumed per Net ton.km (kW.hx10 <sup>3</sup> /ton.km)    | -0.008                    |
| _ Tank/Battery Status:                                                         |                           |
| _ Average Locomotives Tank Status (%)                                          | 0                         |
| _ Average Locomotives Battery Status (%)                                       | 60.029                    |
| _ Average Tenders Tank Status (%)                                              | 0                         |
| _ Average Tenders Battery Status (%)                                           | 0                         |
| -> Statistics:                                                                 |                           |
| _ Average Delay Time To Each Link Speed                                        | 0:00:19:00                |
| _ Average Delay Time To Max Links speed                                        | 0:00:19:00                |
| _ Average Stoppings                                                            | 0.903                     |
| .....                                                                          |                           |
| + TRAIN STATISTICS:                                                            |                           |
| -> Train Information:                                                          |                           |
| -> Train ID                                                                    | 1                         |
| -> Locomotives Summary:                                                        |                           |
| _ Number of Locomotives/Cars                                                   | 1/20                      |
| _ Locomotives (Technology, count)                                              | { Electric Locomotive: 1} |
| _ Operating Locomotives to End of Trains Trip                                  | 1                         |
| -> Cars Summary:                                                               |                           |
| _ Cars Count                                                                   | 20                        |
| _ Cars (Types, count)                                                          | { Cargo Car: 20}          |
| -> Moved Commodity:                                                            |                           |
| _ Total Moved Cargo (ton)                                                      | 480                       |
| _ Total ton.km (ton.Km)                                                        | 137,520                   |
| -> Route Information:                                                          |                           |
| _ Train Reached Destination                                                    | true                      |
| _ Start Node                                                                   | 1                         |
| _ Destination Node                                                             | 8                         |
| _ Train Total Path Length (km)                                                 | 286.500                   |
| -> Train Performance:                                                          |                           |
| _ Operating Time                                                               | 0:02:43:42                |
| _ Average Speed (meter/second)                                                 | 29.1692                   |
| _ Average Acceleration (meter/square second)                                   | -0.0163957                |
| _ Travelled Distance (km)                                                      | 286.500                   |
| _ Consumed and Regenerated Energy:                                             |                           |
| _ Single-Train Trajectory Optimization Enabled                                 | false                     |
| _ Total Net Energy Consumed (KW.h)                                             | 30,336.444                |
| _ Total Energy Consumed (KW.h)                                                 | 30,337.604                |
| _ Total Energy Regenerated (KW.h)                                              | 1.160                     |
| _ Average Net Energy Consumption per Net Weight (KW.h/ton)                     | 63.201                    |
| _ Average Net Energy Consumption per Net ton.km (KW.hx10 <sup>3</sup> /ton.km) | 220.597                   |
| _ Tank Consumption:                                                            |                           |
| _ Total Fuel Consumed (litters)                                                | { }                       |
| _ Battery Consumption:                                                         |                           |
| _ Total Energy Consumed (kW.h)                                                 | 0                         |
| _ Total Energy Regenerated (kW.h)                                              | 1.160                     |
| _ Total Net Energy Consumed (kW.h)                                             | -1.160                    |
| _ Average Net Energy Consumed per Net Weight (kW.h/ton)                        | -0.002                    |



|                                                                 |                     |
|-----------------------------------------------------------------|---------------------|
| _ Average Net Energy Consumed per Net ton.km (kW.hx10^3/ton.km) | -0.008              |
| _ Total Energy Consumed (KW.h)                                  | 30,336.444          |
| _ Total Consumed (KW.h)                                         | 30,337.604          |
| _ Total Regenerated (KW.h)                                      | 1.160               |
| _ Total Fuel Consumed (litters)                                 | { }                 |
| _ Total Energy Consumption per ton.km (KW.h/ton.km)             | 0.221               |
| _ Total Energy Consumed by Region (Region:KW.h)                 | { Not Defined:      |
| _ Average Locomotives Battery Status (%)                        | 30,336.444}         |
|                                                                 | 60.029              |
| -> Statistics:                                                  |                     |
| _ Total Delay Time To Each Link Speed                           | 0:00:19:00          |
| _ Total Delay Time To Max Links speed                           | 0:00:19:00          |
| _ Total Stoppings                                               | 0.903               |
| -> Locomotives Details:                                         |                     |
| _ Locomotive Number                                             | 1                   |
| _ Is Locomotive On                                              | true                |
| _ Power Type                                                    | Electric Locomotive |
| _ Battery Initial Charge (KW.h)                                 | 2,400               |
| _ Battery Current Charge at End of Trip (KW.h)                  | 2,401.160           |
| _ Battery Initial State of Charge (%)                           | 60                  |
| _ Battery Current State of Charge at End of Trip (%)            | 60.029              |
| _ Battery Cumulative Consumed Energy (kW.h)                     | 0                   |
| _ Battery Cumulative Regenerated Energy (kW.h)                  | 1.160               |
| _ Battery Cumulative Net Consumed Energy (kW.h)                 | -1.160              |

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