

**INSTRUMENT LANDING SYSTEM**  
*Outer Marker*  
 Distance to Runway 6000m

**TRANSREGIONAL AIRCRAFT A380**  
*Toronto-London England*  
 Trip Distance 5,724 km  
 Average Speed 945 km/h  
 Trip Time 7h  
 No. of Passangers 500/525  
 Fuel Type 50/50 Jet A+ Biofuel  
 Efficiency 2100L/100km

**INTERMODAL TRANSFER STATION**  
*Train to Truck-Truck to Train*  
 Container Transfer Rate 30/h

**DATA TRANSFER**  
*Fibre Optic Cable Transfer*  
 Average Speed 100 Gb/s over 1000 km  
 No. of Fibres 864/cable  
 No. of Cables 640  
 Total No. of Fibres 552960  
 Total Data Transfer 55,296 Tb/s

**SERVICE CONDUIT**  
 Fresh Water Distribution  
 Solid Waste Collection  
 Recycling Collection  
 Sewage Management

**RESEARCH/CULTURAL CONDENSORS**  
 Strategic Locations  
 People/Jobs (Density) 450 pj/ha  
 Social Contribution: Inestimable

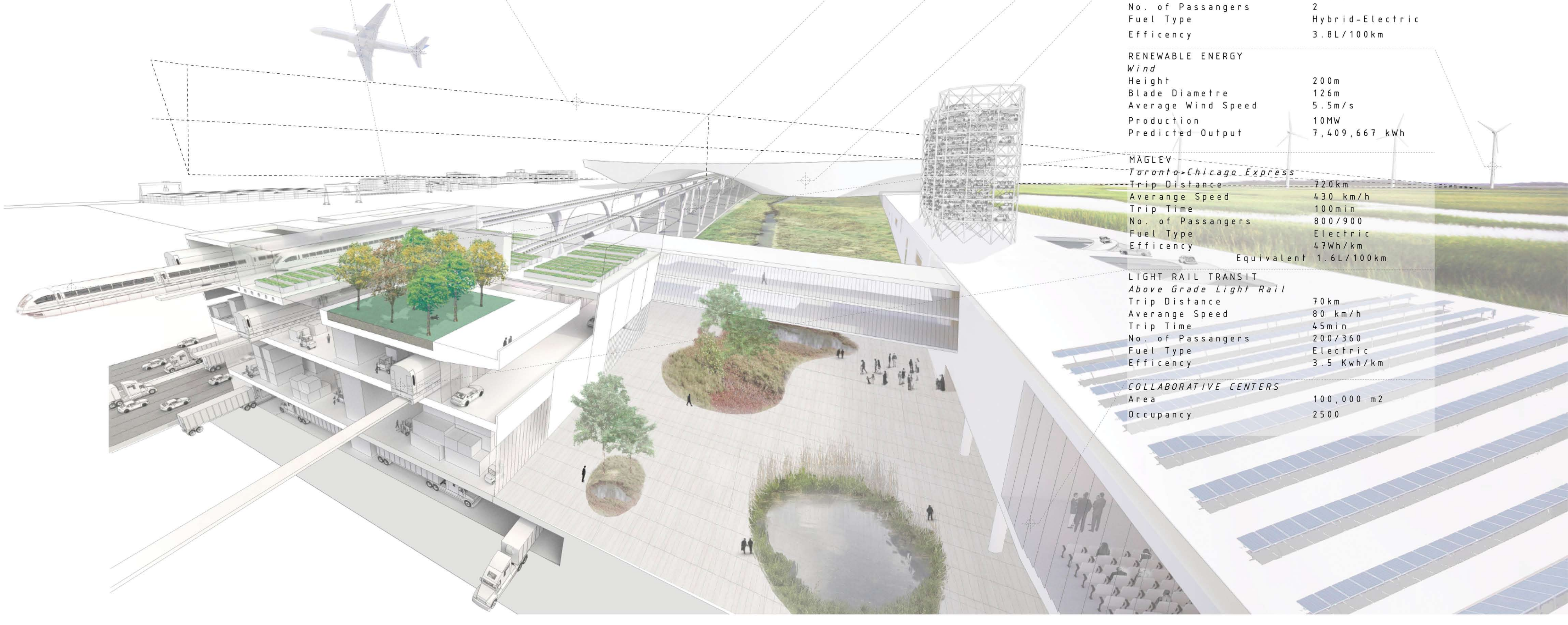
**CAR TOWER**  
*Last Mile Transport*  
 Average Speed 100 km/h  
 No. of Passangers 2  
 Fuel Type Hybrid-Electric  
 Efficiency 3.8L/100km

**RENEWABLE ENERGY**  
*Wind*  
 Height 200m  
 Blade Diameter 126m  
 Average Wind Speed 5.5m/s  
 Production 10MW  
 Predicted Output 7,409,667 kWh

**MAGLEV**  
*Toronto-Chicago Express*  
 Trip Distance 720km  
 Average Speed 430 km/h  
 Trip Time 100min  
 No. of Passangers 800/900  
 Fuel Type Electric  
 Efficiency 4.7Wh/km  
 Equivalent 1.6L/100km

**LIGHT RAIL TRANSIT**  
*Above Grade Light Rail*  
 Trip Distance 70km  
 Average Speed 80 km/h  
 Trip Time 45min  
 No. of Passangers 200/360  
 Fuel Type Electric  
 Efficiency 3.5 Kwh/km

**COLLABORATIVE CENTERS**  
 Area 100,000 m2  
 Occupancy 2500



# Life at the speed of the speed rail will fundamentally transform North American timespace and its emerging megaregions will be shaped by **Conduit Urbanism**.

These agglomerated networks of metropolitan areas with integrated labor markets, infrastructures, and land use, that share and organize complex and interdependent transportation networks, economies, ecologies, and cultures are predicted to dominate development in the next century. As time-space is compressed along rail-based vectors of velocity, radical reorganization of economies and populations will drive new formats of urban morphology.

The largest and most populous of the emerging North American megaregions is the Great Lakes Megaregion (GLM). Its geographic, ecological, and resource-related territory tactically bounds the watershed of the five Great Lakes. As a regional territory it controls one fifth of the world's supply of fresh water and 10,900 miles of shoreline, constitutes the world's largest concentration of research universities and is home to 30% of North America's and 11% of the world's Forbes' 2000 international company headquarters. Daily, over \$900 million worth of goods, or 25% of bilateral trade, crosses the Ontario-US border via the highway system within the GLM.

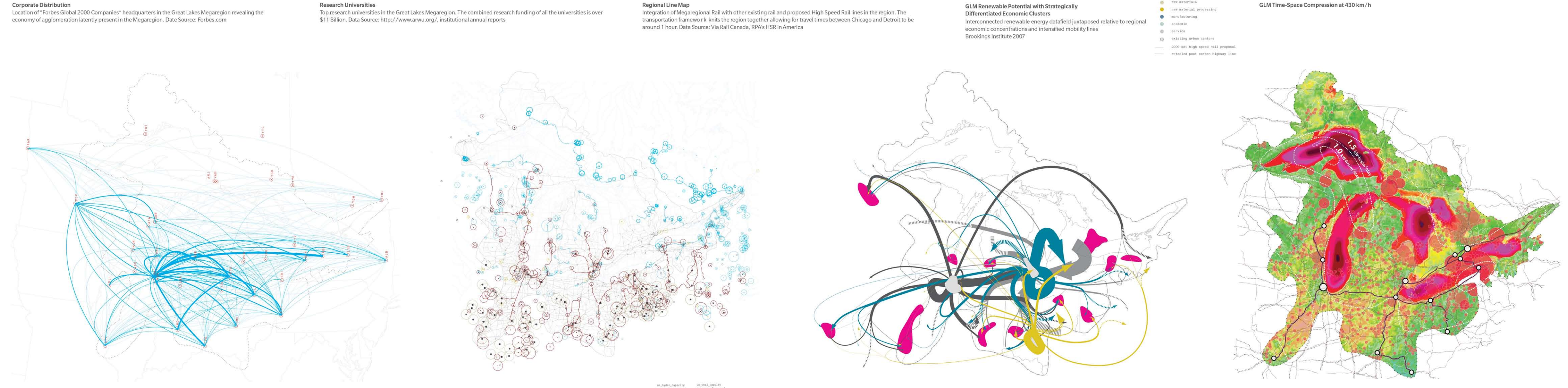
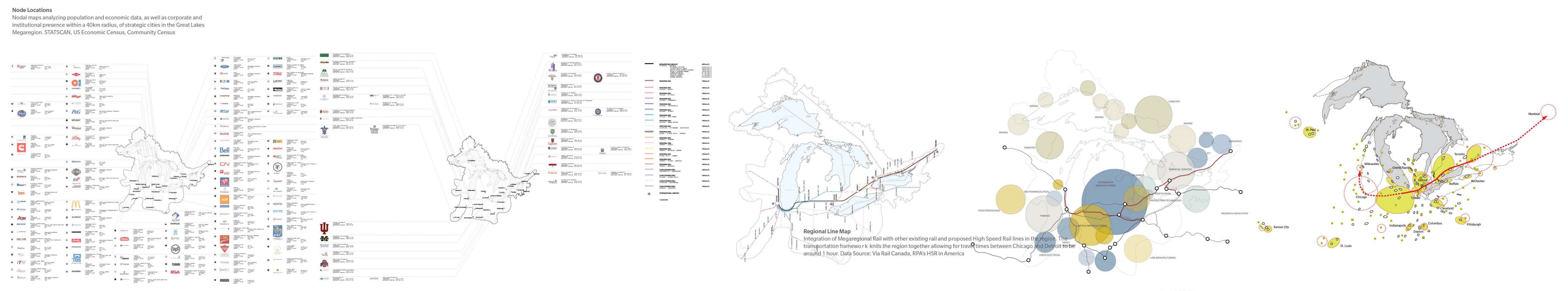
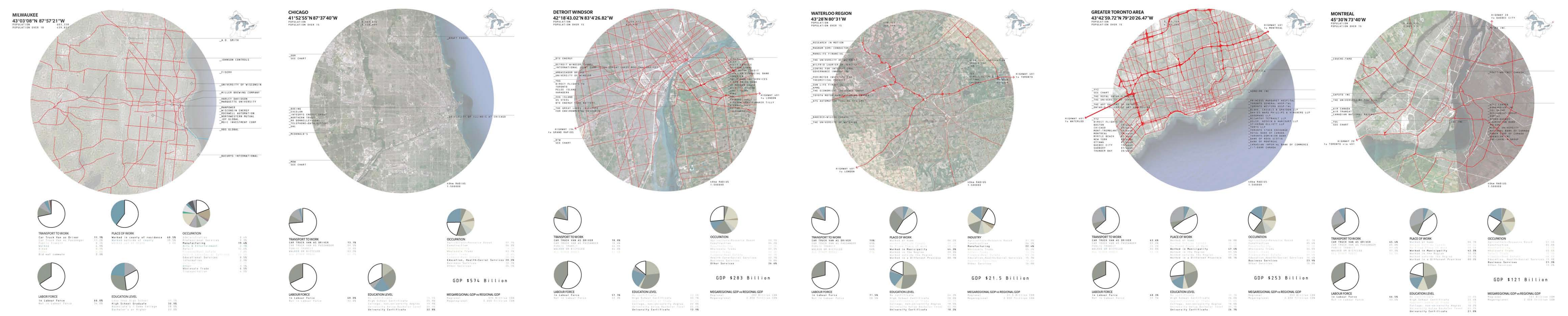
What if the space of the vast territory was collapsed along an elevated line of electrified high speed rail grid connected to the region's vast wealth of renewable energy, producing zero-energy mobility?

The already interlaced economies of the region would become further concentrated. Cultural and intellectual exchange would be heightened. The highly distributed formats of existing highway-enabled urbanity would be highly pressurized to re-assemble

in proximity to the line. Not only would the conduit move people more efficiently than existing mobility systems, but it would also conduct resource distribution – power, information, water resources and waste streams – supporting development along the line.

Critical sites of exchange with the conduit will locate unique forms of nodal concentrations that benefit from the concentration of cultural resources. New formats of research centers, collaboratoria and medical facilities will be spawned generating hyper-concentrations of activity and intelligence as a driver for urban form. In an information economy, the strategic sites of physical information exchange and incubation will become a form of urban desire machines: nodal condensers.

Nodal condensers will reinforce existing urban centers while gathering the location of logistics-based field conditions into their orbits. Once the potential for zero-energy near instantaneous mobility exists, across borders and across cultures, our desires for non-virtual contact with maximum opportunity will be enabled.



**GLM Air Traffic - Commuter Flight Volume - Intra-Regional**

**GLM Energy Production Sites and Volume**  
 Indicates location of coal and hydroelectric power plants, as well as operational coal mines, with volume of production capacity indicated in MgaWatts, and tied to source vectors of rail and water.

**GLM CommodityShed**  
 Sources: US Department of Transportation 2008

**GLM Renewable PowerShed: Renewable Energy Resource Matrix: Wind, Solar, Hydroelectric and Biomass Source Potentials**  
 Sources: NREL 2008, IPCC 2008