Our comments on the City's misleading statements about prospective energy savings

In all probability Honolulu's rail line will be less energy efficient per passenger mile than even our automobiles. This will come as a stunning revelation to most Oahu residents since the city has fed them a steady diet of stories about supposedly energy-efficient rail transit.

For example, an often quoted statistic is the U.S. Department of Energy's 2,784 Btu per passenger mile average for rail transit versus 3,512 for automobiles and 3,944 for light trucks and SUVs, which shows an apparent advantage for rail transit of 20 percent over automobiles.[1]

However, this weighted average includes New York's very efficient subways, which carry over 50 percent of all U.S. rail trips and that totally dwarfs the less efficient rail systems when calculating averages. The New York subways carry as many as 40,000 passengers per hour one-way and have considerable two-way traffic.[2]

Instead of comparing us to such a weighted average we must compare Honolulu's rail line to the U.S. DOE 's average of both heavy and light U.S. rail transit lines. The average of light rail lines is 4,386 Btu per passenger mile and for heavy rail lines it is 3,923 Btu per passenger mile if New York lines are retained or 4,104 Btus if they are not.[3]

This shows that rail transit is significantly less energy efficient than the 3,445 for regular automobiles and still slightly less than SUVs.

Honolulu rail would be very directional; heaviest loads into town in the morning peak hours and empty going back out, with the reverse in the afternoon peak. It would run fairly empty during most of the day. This does not make for energy efficiency.

In addition, we have to consider that commuters using automobiles usually take a direct route to work whereas rail commuters must take the walk-bus-rail-bus-walk circuitous route necessitated by rail, which typically makes the miles traveled by the rail option ten percent, or more, longer than the route used by automobiles.

Next, since the time horizon for the rail project is 2030, we have to project the likelihood of future energy efficiencies for rail, bus and auto for that time.

Automobile Btu per passenger mile has been declining significantly in recent years[4] and future reductions looks even brighter. Hybrids are getting far higher miles per gallon than the average car and their market share is expanding exponentially. In addition, small highly efficient diesel cars are being introduced. The Hyundai i30 diesel, for example, has combined highway/city mileage of 60.1 mpg.[5]

The same kind of potential efficiencies for the future also apply to buses. However, it appears that the great energy savings being forecast for automotive vehicles are not being forecast for rail transit other than for dynamic regenerative braking which may in time lead to a 15 percent power savings.

Given all of the above, it is almost impossible that Honolulu's rail transit could be more energy efficient than our autos by 2030.

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1 http://cta.ornl.gov/data/tedb26/Edition26_Chapter02.pdf Table 2.12
2 http:/www.honolulutraffic.com/BTU_per_PM.xls
3 http://www1.eere.energy.gov/vehiclesandfuels/facts/favorites/fcvt_fotw221.html
4 http://cta.ornl.gov/data/tedb26/Edition26_Chapter02.pdf Table 2.13
5 http://www.carkeys.co.uk/road_test/hyundai/14074.asp