The High Speed Passenger Rail Act, Draft 1

Posted by Jerome a Paris on March 17, 2007 - 1:00pm
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Energize America (as recently introduced to the Oil Drum) has been working on draft legislation to help America reach energy security in the face of peak oil and our over-dependence on the Middle East, and to address concerns about global warming through efficiency and energy alternative measures. This week saw the delivery of several legislative proposals to Congress. Among the commentary and responses there has been one issue that stood out to me: increasing support for rail, both passenger and freight.

The following is a first draft of a new "High Speed Passenger Rail Act", based on Act V - "The Passenger Rail Restoration Act" of Energize America version 5. The first portion consists of background information on the energy benefits and previous legislation, and the second is the actual proposed act. Your comments will help make this a more solid proposal that could make a real difference to the future of this nation!

The High Speed Passenger Rail Act - Background

Energy Implications

Passenger air travel in the US in 2005 got about 45 passenger-miles per gallon of fuel, emitting 140 million tons of CO2 in total (1). Passenger cars on highways traveled over 1.5 trillion miles with an average of 1.59 occupants, at about 44 passenger-mpg, emitting about 750 million tons of CO2. Both air and automobile are heavily dependent on liquid fuels whose future supply is uncertain.

Successful high-speed rail systems, implemented in Japan and Europe, particularly the French TGV system, run on electricity with an efficiency equivalent to 300 to 500 passenger-mpg. And electric power is the easiest form to generate from new energy sources such as wind and solar energy. High-passenger-load high-speed rail would dramatically reduce the impact of the passenger transportation sector on energy consumption and CO2 emissions.

Current US Passenger Rail Status

Mention passenger rail in the US and people think first of Amtrak and its perpetual funding crisis. Amtrak's total ridership of 25 million per year is dwarfed by the 658 million for air travel and the billions for cars. But commuter rail is widely successful across the country, and "light" inter-city passenger rail has been making a comeback in recent years thanks to state funding to help offset pollution and congestion, for a combined total of 750 million annual trips in 2003 (2). Americans are at least as willing to travel by train as by airplane. The problems with Amtrak are simple to state: unreliability, coupled with high cost and low speed. On some routes, 96% of Amtrak trains arrive late (3). On all but a very few routes, taking the train takes longer than traveling by car because the trains are limited to 79 mph. Yet the cost can be comparable to or even higher than

plane fare.

Train travel has one advantage over road or air: it's much easier for business travelers to work on the way. But that doesn't help if they arrive at their meetings hours late. States, seeing the importance for local development and pollution-prevention, have taken matters into their own hands and funded significant upgrades for inter-city passenger rail service in Washington state, California, Illinois and Pennsylvania, and other states appear eager to join (3).

But even the fastest "high speed" trains on US railroads rarely go much above 100 mph. By comparison, the French TGV reaches 200 mph in commercial service and over 300 mph in tests, thanks to dedicated passenger-only high-speed track. A successful US program needs to match or exceed the French example with average inter-city travel speeds of at least 150 mph, to provide any significant competition to automobile or air travel. This will require a significant capital investment in high speed rail on the order of tens of billions of dollars over a period of a decade or more. The interstate highway system provides a useful model, with its 80/20% federal/state funding approach, though with rail travel the passenger rail operators would constitute a third partner that should have some equity investment in the project.

Current Legislation and Activity

The US Department of Transportation includes the Federal Railroad Administration which for 2006 had a $1.5 billion budget, about $1 billion of which was for Amtrak support, with roughly half for infrastructure improvements and half to subsidize operating losses. The Bush administration budget proposals for 2007 and 2008 included significant decreases in the FRA budget, to just over $1 billion in 2008, but also included $100 million outside of Amtrak to support state-initiated projects for rail improvements. The FRA in a 1997 report highlighted 12 potential high-speed rail corridors around the country that could be developed at a cost of $50-75 billion over 20 years (4). To fully fund those corridors with the highway administration's 80/20 funding level means a federal contribution of up to $3 billion/year, at least 5 times what the administration proposes in the near term.

Senate bill S.294, the "Passenger Rail Investment and Improvement Act of 2007" appears to have an important proposal in Title III, on competitive funding for inter-city rail (Title II covers Amtrak).

Previous US Legislation

- 2005 Safe Accountable Flexible Efficient Transportation Equity Act - A Legacy for Users (SAFETEA-LU)
- 1998 Transporation Equity Act for the 21st Century (TEA-21)
- 1994 Swift Rail Development Act
- 1991 Intermodal Surface Transportation Efficiency Act
- 1980 Passenger Railroad Rebuilding Act
- 1976 Railroad Revitalization and Regulatory Reform Act
- 1973 Amtrak Improvement Act
- 1970 Rail Passenger Service Act
- 1965 High Speed Ground Transportation Act

References: (1) Numbers on fuel use and passenger miles from the Bureau of Transportation Statistics: www.bts.gov
(2) Bureau of Transportation Statistics Annual Report, 2005: http://www.bts.gov/publications/transportation_statistics_annual_report/2005/html/chapter_02/figure_06_04.html
(3) "Revving up the Rails", by Josh Goodman, Governing Magazine, March 2007 - http://www.governing.com/archive/2007/mar/trains.txt
(4) Department of Transportation Report to Congress, 1997: http://www.fra.dot.gov/us/content/515

The High Speed Passenger Rail Act - Draft Text

Next Generation Transportation

Objective

To enable a transition from energy intensive medium-distance air and road transport of passengers to cost-effective, reliable, and safe rail transportation through creation of dedicated high-speed intercity passenger rail services.

Description

The High Speed Passenger Rail Act (HSPRA) of 2007 will provide up to $3 billion per year in federal matching funds under a 60/40 rule to build rail infrastructure improvements necessary to develop high-volume high-speed passenger rail services between major American cities. Both tourism and commerce rely on rapid, dependable transport between cities. This has increasingly been handled by air travel, but the dual pressures of increased security and rising fuel prices have made air travel both more cumbersome and more expensive. High-speed passenger rail is more fuel efficient, quicker and more environmentally responsible than regional air travel, and can serve a key role in a low-emissions future. European experience shows that high-speed trains are more convenient, faster and profitable on high-density or metro-to-metro lines, and can offer a compelling alternative to air travel on trips up to 500 miles, taking 90% of airline traffic for point-to-point trips of less than 2 hours (300 miles at 150 mph), and 50% of airline traffic for trips lasting 3 hours (500 miles).

American passenger rail service could rebound if a single modification were made - increased speed on dedicated infrastructure. The High Speed Passenger Rail Act proposes a federal-state-private partnership to build, equip and operate new high-speed electric rail lines using existing technology. The Department of Transportation would consider joint proposals from states and private operators or Amtrak, with the federal government to provide 60% of capital investment. These proposals would be judged and funded under the following metrics and preferred criteria:

1. Average inter-city speeds: at least 150 mph.
2. Time to high-volume operation: 3 years or less
3. Likely annual ridership
4. Level of CO2 emissions reductions and other environmental benefits
5. Reliability and safety of operations

Additionally, under this Act the Secretary of Transportation will annually prepare and submit to Congress an analysis of high-speed inter-city passenger rail showing current values and trends for these and other relevant metrics.

Benefits

The HSPRA will 1. begin to significantly reduce energy consumption and CO2 emissions in the transportation sector by replacing energy-intensive passenger air and road travel
2. create new jobs through increased economic activity,
3. increase the resilience of US inter-city travel by providing a high-volume alternative to road and air travel,
4. leverage state and private funds in the transportation sector
5. establish and measure success in implementing high-speed rail.

Investment

The Federal Government will invest up to $3 billion per year in a 60/40 split with state and private partners on capital investments in high speed electric rail systems.

Key Messages

1. passenger rail transport can consume one tenth the energy of air and road travel, per passenger mile
2. the key barrier to development of high speed passenger rail service in the US has been lack of suitable track and unreliability of existing service due to conflicts with freight rail transport.
3. Americans already travel by commuter rail in large numbers. High speed inter-city rail is profitable in Europe and Japan; it can work here too.

Note: Energize America volunteers will read this thread and pick up ideas and suggestions,

with a view to integrating them into a new draft, which will be re-submitted again to your readership. You can provide nitpicks, fully drafted alternatives, more numbers, other ideas, ... All improvements are welcome - and indeed we are aware that they are needed. If you are really motivated about this topic or any other, you're welcome to join the editing teams. Just email us.