

# 10 Billion Swiss Franc Project to Build World's Longest Railway Tunnel Ahead of Schedule

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By Matthias Scherer and Samuel Moss (Lalive)

An acceleration of the drilling and construction of the Gotthard Base Tunnel over the past years has left its planners faced with the unusual prospect of the project being completed a year ahead of schedule. Work on the 57 km long railway tunnel through the Swiss alps, the longest in the world, was scheduled to be completed in 2017. However, following faster than anticipated progress in the excavation and construction of the tunnel, the consortium of companies responsible for the second phase of the works, the installation of the railway infrastructure, will propose the possibility of a 2016 hand-over date.

The Gotthard Base Tunnel is part of the 20 billion Swiss Franc AlpTransit project to build a new rail link through the Alps, with the objective of creating a direct and level route for high speed passenger and freight trains. The new rail link will lead to significantly shorter travel times, for example shaving an hour off the current 3.5 hour trip from Zurich to Milan, and will partially accommodate the projected increase in passenger and freight traffic through the Alps. The project involves the boring of several tunnels, of which the Gotthard Base Tunnel will be the longest and most costly, at just under 10 billion Swiss Francs. The tunnel construction is led by Alptransit Gotthard GA, a wholly owned subsidiary of the Swiss Federal Railways.

Instead of the dual-track tunnel which was initially planned, the Gotthard Base Tunnel consists of two parallel single track tunnels, allowing for faster excavation and shortening construction time by two to three years. Construction time was also shortened by digging several access tunnels, allowing for construction to be conducted on several sections simultaneously. Various consortia were assigned the construction works for different sections of the tunnel, and consist of several major international construction companies. For example, the Consorzio TAT, responsible for the Faido and Bodio sections, includes Hochtief, Implenia and Impregilo, among others. Excavation works are being conducted using four imposing tunnel boring machines, as well as by drilling and blasting. Only a small portion of the tunnel still remains to be excavated, with final break-through in one of the parallel tunnels expected to occur in the autumn of 2010, and break-through in the other expected for the beginning of 2011.

The progress of the boring and construction works has allowed for the second main phase of the project to begin at the end of June 2010: the installation of the railway infrastructure, including the railway tracks, power supply, telecommunication and safety systems. The consortium which was awarded the 1.7 billion Swiss Franc contract for installing the railway infrastructure, Transtec Gotthard, is composed of Swiss energy company Alpiq, British infrastructure company Balfour Betty, French technology company Alcatel-Lucent/Thales and Austrian construction company Alpine Bau. Transtec Gotthard expects to complete the first section of the tunnel by 2013, allowing for test runs at speeds of up to 230 km/h.

AlpTransit Gotthard SA has recognised that it would be technically possible to complete the project a year before schedule, barring any delays to the final break-through of the excavation works, which could for example be caused by cavities or water. It is uncertain however whether AlpTransit Gotthard SA and the ultimate user of the tunnel, the Swiss Federal Railways, will approve the acceleration of the works. In particular, such an acceleration would engender additional costs and would require a greater coordination of the construction works. The political overseers of the project have expressed reservations. Moreover, given that the tunnel is unlikely to be profitable, the advantages of a sooner than planned entry into service are not readily apparent. Indeed, it is uncertain whether revenues from the tunnel will even be sufficient to cover its operating and maintenance costs.