


# Will the Gozo tunnel be safe? - John Ebejer

EU directives are very clear when it comes to tunnel safety

Opinion

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Gozo

September 10, 2019 | John Ebejer |  61



Many questions on safety, cost, environmental impacts and method of waste disposal are related to the proposed tunnel. Photo: Shutterstock.com

An EU directive deals with the minimum safety requirements for tunnels (Directive 2004/54/EC). It specifies that all new tunnels for cars require an emergency exit every 500 metres.

Emergency exits should lead from the tunnel directly to the outside but, where this is not

Emergency exits should lead from the tunnel directly to the outside but, where this is not possible, exits to adjoining parallel tunnel tubes are also acceptable.

This may seem to be very stringent but it is based on decades of EU transport authorities' experience of road tunnels.

A car crash could result in a fire. No matter how small, a fire in a confined space will take away the oxygen, meaning that people could suffocate from lack of oxygen and smoke inhalation.

Emergency exits allow tunnel users to walk to a safe place in the event of an incident and also provide access on foot to the tunnel for emergency services.

A very important question is this: Will the tunnel be safe? With a single tunnel tube, the EU directive cannot be met. A second tube is not an option because of the cost.

The government may choose to ignore the directive but this would expose it to legal challenges. More crucially, if the tunnel is perceived to be unsafe, many people will choose not to use it.

As much as safety is vital, there are other important questions that need to be addressed.

How much will the tunnel cost? Up to a few months ago, the figure of €300 million was being mentioned. More recently, nothing has been said about the cost. It seems the authorities have come to realise how unrealistic that estimate was, more so when dealing with so many unknowns.

The Gozo tunnel will be 13 kilometres long – a length that is technically very challenging, even for experienced designers and contractors.

The cost per kilometre run of tunnel is higher for longer tunnels because of increased time and effort required to transport workers and materials in and out of the tunnel.

Another difficulty in longer tunnels is ensuring that air quality remains of sufficiently high standard, during construction and eventually when in operation.

“ *The decision to go ahead with the tunnel is reckless and irresponsible* ”

The presence of fissures in the rock may create further technical difficulties relating to structural stability and water ingress, especially during construction.

These are all factors that point to escalating costs.

Then there is the added cost of disposing of over a million cubic metres of excavated material.

Who will pay for it? There was a time that project proponents claimed that it would be financed by the private sector who would generate enough income to cover the capital and running cost.

More recently, the authorities are not saying how it will be financed but everything points to public funding.

Let's make some calculations. Including the cost of waste disposal, let us assume a total cost of €800 million. That works out at €1,800 per person of the population.

So, a Maltese household of four persons who may occasionally visit Gozo will be forking out €7,200 for the privilege.

Given that there is a viable alternative, the ferry service, the decision to go ahead with the tunnel is reckless and irresponsible.

Will the benefits justify the cost? Only recently it was announced that the cost-benefit analysis was being updated. That is good news because hopefully that will let us know what the real costs and benefits will be. Going by the information that is currently available, the usage of the tunnel will not be remotely sufficient to justify the huge costs and the significant risks.

How will the inert waste generated from the tunnel be disposed of? One million cubic metres of inert waste will be excavated.

That amount of waste cannot be disposed of on land, not unless the government wants to create a few Magħtab-like hills in Malta and Gozo.

The alternative is land reclamation. This will have severe environmental implications with the loss of a significant stretch of natural coastline, either at Baħar iċ-Ċagħaq or Xgħajra.

The environmental impact of the land reclamation is a non-financial cost that must be factored into the cost-benefit analysis, as should the various environmental impacts on the land around the tunnel mouths.

An Environmental Impact Assessment is being carried out. This is an essential requirement for the eventual development permit, but it is not enough. According to national legislation and EU directives, any plan or programme that is likely to have a significant effect on the environment should be subjected to a Strategic Environmental Assessment.

The implications of the tunnel project are far reaching for both Malta and Gozo, but especially for Gozo and hence the project should be considered tantamount to a programme requiring a SEA.

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Before the summer recess, Parliament agreed that the Gozo tunnel should go ahead.

The parliamentary debate was very disappointing, not only for the outcome but also for the way our elected representatives decided without reference to any reliable information.

There are so many questions, on safety, cost, environmental impacts and method of waste disposal. These and other questions remain unanswered.

*John Ebejer is a lecturer at the University of Malta.*

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**Joseph Croker** • 17 days ago

Do we really need the tunnel? If we do, can we afford the cost of building and maintaining it? Are we saddling future generations with a whole herd of white elephants just to appease those (few?) who would benefit from such a tunnel? According to Gozo Minister, the introduction of the fourth ferry did wonders to eliminate queues and show that we can do comfortably without the tunnel.

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**Drin Zerafa** • 17 days ago • edited

A well and truly solid example of an example of waste of money. A fast ferry to Cirkewwa and one to Valletta are the solution.

5 ^ | ▾ • Share ›



**Mario Naudi** → Drin Zerafa • 17 days ago

Can you give us a break down of the considerations that led you assert that 2 fast ferries to cirkewwa and valletta would eventually solve the problem?

2 ^ | ▾ • Share ›



**Joseph Sammut** → Mario Naudi • 17 days ago

Can YOU tell us why they wouldn't?!!!

2 ^ | ▾ • Share ›



**Mario Naudi** → Joseph Sammut • 16 days ago

Very simple....weather conditions....a complete overhaul of the road infrastructure in an already highly dense area like Valletta. Apart from the fact that, as I showed in another comment a

tunnel would cost around 460mln euro....2 fast ferries would cost approx 150mln euro + running cost etc.....i leave it up to you to decide which is the best option.

^ | v • Share ›



**Joseph Sammut** → Mario Naudi

• 16 days ago

For the record, I was always against a permanent link of any sort, maintaining that this is nothing but dangerous political folly. As for your "very simple", I'm not sure if you are for or against a permanent link. Also, re. tunnel, you didn't factor in its running costs for a complete comparison.

^ | v • Share ›



**Revel Barker** • 17 days ago

The problem with writing (and publishing) sensible arguments about why the tunnel should not or cannot be done is that it reminds the government (and, come to that, the opposition) that they have painted themselves into a corner.

It was a loony idea from the start. It became even more loony with suggestions that it might be funded by "a consortium of Gozitan businessmen", and the pro-tunnel lobby doesn't seem to have got any brighter.

The best thing might be to stop jerking the tunnellers' chain and let the whole idea fade away.

...Like most of the other government (and opposition) promises.

5 ^ | v • Share ›



**Joe Xuereb** → Revel Barker • 17 days ago • edited

Apart from the obvious hazards as someone who knows nothing about tunnels but knows a lot about human error and earthquakes, etc. - that apart, all this to connect two tiny pieces of rock?! There is only one advantage(of sorts). People suffering from an inferior small-island mentality will always agree to any project that will inflate their beleaguered small-island minds. Hence the proliferation of high-rise concrete monstrosities all over the place. Apparently unstoppable. So, bring on the tunnels and the high-risers we do not need.

^ | v • Share ›



**Mario Naudi** → Revel Barker • 17 days ago

Ok... and let things go they are now I guess!!!

OK...and let things as they are now I guess!!!

^ | v • Share ›



**Joseph Sammut** → Mario Naudi • 17 days ago

There are more ways to skin a cat, I guess!!!

^ | v • Share ›

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**Paul Vella** • 17 days ago

'The alternative is land reclamation. This will have severe environmental implications with the loss of a significant stretch of natural coastline, either at Baħar iċ-Ċagħaq or Xgħajra.' This type of debris cannot be used for land reclamation...this will be in the form considered too fine to be used for that use.

2 ^ | v • Share ›



**Paul Xuereb** • 17 days ago

The author shows so clearly how much work needs to be done before any decision is taken about this important matter.

2 ^ | v • Share ›



**Mario Naudi** → Paul Xuereb • 17 days ago

Anybody said it would have been just a sketch on a piece of paper?

^ | v • Share ›



**saviour stivala** → Paul Xuereb • 17 days ago

“the author shows clearly” one by one, one after the other slowly but surely they will all crewl from under their rock where they will lay dormant to give a helping hand as long as the administration they support is not in power.

^ | v • Share ›



**carmendelia** • 17 days ago

One or two more operating vessels will meet all the demands This project is yet another vehicle for commissions for the crooks

It will not come as a surprise if the government ignores the directives. One just hopes the sense of safety will prevail, This article surely raises a lot of questions about safety

2 ^ | v • Share ›



**Mario Naudi** → carmendelia • 17 days ago

Stop this trend of alleging that everything is corruption.....it is such a disgraceful statement. Regarding safety....you have no expertise about it.

1 ^ | v • Share ›



**C Cassar** → Mario Naudi • 17 days ago

The rest of Europe knows that Malta is a corrupt and lawless nation. Why don't you understand that?

^ | v • Share ›



**Mario Naudi** → C Cassar  
• 16 days ago • edited

I'm sorry for you but the rest of Europe knows that you are just a keyboard freak that has nothing to do but to write nonsense.

1 ^ | v • Share ›



**Luciano Chetcuti** → Mario Naudi • 17 days ago

Mid-dehra ma thallasx taxxi jew mhux qed tinduna li t-taxxi li thallas qed jigu mberbqa "left, right and centre" u moghmi biss bi ffit centezmi ta' zieda u ffit iehor tnaqqis fil-kontijiet tad-dawl u ilma. Haddem wahda mohhok ahjar u tara kif il-gvern tal-gurnata jista' jahdem bi flusek ahjar u b'mod iktar efficjenti. Jew forsi wiehed minn dawk li qed ipappuha??

^ | v • Share ›



**Mario Naudi** → Luciano Chetcuti  
• 16 days ago

L-ebda gvern ma hu perfett u dejjem ha jkun hemm min jipprova japprofitta ruhu....imma jibqa l-fatt li illum qed nghixu ahjar milli konna. U ghandek provi madwarek il hin kollu. Jigifieri iftah ghajnejk u tippretendix li xi darba ha tkun qed tghix f'xi socjeta perfetta....imma ghalinqas ahseb li hawn min jipprova jtejjeb il-hajja ta' haddiehor.

^ | v • Share ›



**edward mallia** • 17 days ago

Some points worth emphasising: "The environmental impact of the land reclamation is a non-financial cost that must be factored into the cost-benefit analysis, as should the various environmental impacts on the land around the tunnel mouths." It is not a foregone conclusion that the excavated material will be suitable for land reclamation and will in any case need massive sea-defenses to last. But the "temptation" of "land reclamation" for "experts" must not be underestimated. Look at the recent Xuereb proposal for a Malta Underground, with "re-claimed" land turned into a "nature park" as the final "resting place" for the excavated material.



As for "the various environmental impacts on the land around the tunnel mouths.", who cares? A week ago we had a pathetic sermon from an Energy & Water guru on more careful use of water, which included the "brand new" item of NOT brushing teeth with a running tap, and advice about showering which forgot "power showers". No mention of the fact that one of the "non-environmental" effects round the Malta tunnel mouth at Miziep is the destruction of the 6 million m<sup>3</sup>/p.a. water source at l-Imbordin. That volume amounts to around 30% of domestic water consumption.

As to the mandatory need of a Strategic Environmental Assessment (SEA) for the Gozo Tunnel, it may be worth mentioning a fact that seems to have slipped below many radars, including that of Mr. Ebejer: three e-NGOs have been in Court since 2007 on the claim that George Pullicino's 2006 Rationalisation Act -- certainly a "plan or programme that [was] likely to have a significant effect on the environment -- needed an SEA. No end in sight to the case after 12 years; the Gozo tunnel would be up (or is it down?) and running well before that.

1 ^ | v • Share ›



**Jonathan Scerri** • 17 days ago

Quoting from the mentioned Directive:

"The main criteria for deciding whether to build a single or a twin-tube tunnel shall be projected traffic volume and safety, taking into account aspects such as the percentage of heavy goods vehicles, gradient and length."

So, to postulate that a single-tube tunnel is not compliant with the Directive is already wrong. Hope that this is not how UoM lectures are delivered.

1 ^ | v • Share ›



**Joe Vella** → Jonathan Scerri • 17 days ago

"It specifies that all new tunnels for cars require an emergency exit every 500 metres". Unless this is possible without having a second tunnel, then yes a single-tube tunnel is not compliant

^ | v • Share ›



**Ozzy Biza** → Joe Vella • 17 days ago

Well, the periti who built the Sta Venera tunnels have not yet figured out why water is leaking when they are so high above sea level. Don't let them design the Gozo tunnel.

^ | v • Share ›



**Peadar Farrell** • 17 days ago • edited

John, the tunnel could not be built without EU funding



John, the tunnel could not be built without EU funding.

Funding will not be paid over without complying with all current EU directives. That includes the items that you mentioned plus room at the exits for a tunnel full of cars to escape to without impediment. Fissures in the rock are always found, over 13km dozens of them will crop up. I would multiply your cost figure x3 and then add 10% for contingency to get to a final figure.

1 ^ | v • Share ›



**Mario Naudi** → Peadar Farrell • 17 days ago

Even if not EU funded, it must still comply with EU regulations / directives. Regarding the cost....so according to your expertise the final cost is 2,640,000,000 (2 billion, six hundred forty million euro).....hope you are joking.

1 ^ | v • Share ›



**C Cassar** → Mario Naudi • 17 days ago

That's actually quite a low figure for such a project.

^ | v • Share ›



**Mario Naudi** → C Cassar • 16 days ago

Guess you have a huge competence in the subject....enlighten us.

^ | v • Share ›



**Robert Mawby** → C Cassar  
• 17 days ago

What would you know about the cost of undersea tunnels?

Been involved in Civil Engineering long have you CC?

^ | v • Share ›



**David Carrington** → Mario Naudi • 17 days ago

Sounds about right.

^ | v • Share ›



**Mario Naudi** → Peadar Farrell • 16 days ago

<https://ec.europa.eu/region...>

This is a study by EU about tunnels.....the range of cost for a tunnel oscillates between a minimum of 25mln euro per KM to 32mln euro per km. Depending on the type of rock. This means that a 13km tunnel like proposed in Malta would cost between 325mln euro and 416mln euro....add a 10% contingency....that makes it maximum 460mln euro.....

^ | v • Share ›



**R Cassar** → Mario Naudi • 16 days ago

The study that you have quoted (on railway tunnels, by the way), states:

“The cost of tunnels have been identified to range between 25 M€ /km and €30 M€ /km on average. While this range reflects the average values of the sample, it does not prevent values to reach over 80 M€ /km, as found in very complex tunnel construction cases”.

And:

“The main geological factors affecting the tunnelling costs are:

- Geodynamic context: recent or ancient orogenic chain, inner continental basin, peri-continental basin;
- Geological condition, and in particular:
  - o Lithology and fracturing, defining the rock-mass quality (e.g. RMR, Q index, GSI, etc.);
  - o In situ stresses, mainly related to the tunnel

[see more](#)

1 ^ | v • Share ›



**Mario Naudi** → R Cassar • 16 days ago

Still it is nowhere near the 2.64 billion as quoted by others. And that 80mln is considered in special cases. Which might not be the case of the Malta - Gozo tunnel. We wait and see who is right....there is no hurry.

^ | v • Share ›



**s camilleri** → Mario Naudi • 16 days ago • edited

The study that you refer to is about rail tunnels on land. Tunnels that pass under water are much more problematic and the construction costs will be much higher than 32 million per kilometre. In any case, 460 million euros is already substantially more than the 300 million that was being mentioned previously.

Also I suggest you read Arnold Cassola's article today on what the experts say about the fissured nature of the seabed between Malta and Gozo. This will be a high-risk white elephant graciously funded by the taxpayer.

^ | v • Share ›

**James Calleja** • 16 days ago



**James Caneja** · 16 days ago

Bir raba ferry, il problema ittaffiet. Din s sena is sitwazzjoni kienet ahjar.

^ | v · Share ›



**Carol Briffa** · 17 days ago

Add the cost of land reclamation which costs runs into billions of Euro.

Maybe the developer will be compensated by building towers on this land reclamation.

BYE BYE SEA VIEWS.

^ | v · Share ›



**C. Magro** · 17 days ago

maybe the idea of bridge might make more sense now? No waste will be generated, more lanes decked on each other and can be a nice piece of Engineering to look at.

^ | v · Share ›



**David Carrington** → C. Magro · 17 days ago

Forget any fixed link as it is way, way too expensive. Better to improve further the already tried and trusted method: the ferry. BUT, there needs to be fresh thinking on this - the concomitant problem is the amount of road traffic on both islands. As has been mentioned, a fast passenger-only ferry service would fit the bill, but stopping not just at Valletta, but also Sliema and other points for convenient jumping off onto a bus to go the hospital, the university, airport, etc. Better buses would also need to be part of the plan...

2 ^ | v · Share ›



**Joseph Sammut** → C. Magro · 17 days ago

Bridge to where?

^ | v · Share ›



**Mark Bartolo** · 17 days ago

1800 euro per capita includes all Maltese, I think a more sensible number would have considered working adults. However this would not mean anything either.

^ | v · Share ›



**Martin Joseph** · 17 days ago

I think Gozo should pay for the tunnel!

^ | v · Share ›

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