



SAVEOURSOLARTAS.ORG

Tasmanian Energy Reform

FEED-IN TARIFFS – SUBMISSION

Tasmanian Economic Regulator

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Introduction

This is a submission to the Tasmanian Economic Regulator (TER), by the lobby group saveoursolartas.org (SOST), in response to the draft determination released in September 2013. It reveals the reasons behind the draft decision to provide a feed-in tariff for solar PV owners of 8.282c/kwh. This report highlights that the terms of reference provided by the Minister's department are narrow and misleading. Our submission will highlight important factors to be considered by the regulator when formulating its principles for a fair and reasonable Feed-in Tariff (FIT).

Included with this submission is a petition asking for support in legislation for 1:1 feed-in tariff (FIT) going forward. While we see this as ideal to encourage the growth of solar grid connect with a fair reasonable feed-in tariff, we can see that the regulator currently cannot validate the continuance of a 1:1 FIT.

The organisation "Save Our Solar Tas" was formed in response to the proposal to reduce the current 1:1 feed-in tariff in preparation for the privatisation of the electricity retail market in Tasmania.

The organisation stands up for the vast majority of solar retail and installation businesses in Tasmania and the large and growing number of ordinary Tasmanians who have invested in solar power on the rooves of their homes. We have the support of the Clean Energy Council as well as the Australian Solar Council. We also have the support of the Tasmania Chamber of Commerce and Industry.

A website, Facebook page, an on-line and a paper petition calling on the Tasmanian Government to maintain the 1:1 FIT has been initiated and maintained and the Facebook page has over 2400 "likes" and the petitions have well over 2600 signatures.

There are over 16,000 Tasmanian households who have installed solar power. Currently, a high percentage of retail clients are pensioners and self-funded retirees who want to "future-proof" themselves from high and increasing energy costs.

The Terms of reference

The terms of reference set out by Minister are a clear indication of Minister Bryan Green's vision (or lack thereof) for renewables in Tasmania.

"The unfairness of using "net financial benefit to retailers" as the primary test is particularly evident in the TER's arguments about the treatment of transmission and distribution charges.

Aurora residential customers are informed on their bill that transmission and distribution charges make up 47.7% of the cost of their electricity.

"The TER report acknowledges that local generation of electricity reduces the need for transmission and distribution infrastructure. But, the TER argues that this benefit should not be recognised in the FIT because the way the cost of this infrastructure is currently recouped will not lead to a direct reduction in costs to retailers when solar electricity is fed into the grid..... Solar owners who export electricity should be financially rewarded for generating electricity close to the point of use and avoiding the need for infrastructure that make up nearly half the cost of electricity."

[Jack Gilding, Solar Citizens, Press release September 2013](#)

SOST agrees with this point of view and as you will read elsewhere in this document the net financial benefit to retailer's concept has been clearly copied from other jurisdictions around the country. It is clear that the structure of wholesaling power in this state is completely different to other states and that the financial gain is clearly with the government owned distribution companies.

SOST would also like to note that the COAG national principles for Feed-in tariff are purely a guide. We understand that from discussions with a government minister that even the government does not entirely agree with the principles and once again we can see that the terms of reference have not been thought through properly. We ask that the TER understand that they have been written without Tasmania's unique opportunities and circumstances in mind.

SOST urges the TER to look at Tasmania's unique opportunities using the point in the terms of reference where they can consider "any other matter The Regulator considers relevant." This does give the TER the scope to ask direct the appropriate parties to investigate and implement any change necessary to facilitate a fair and reasonable FIT.

Other Jurisdictions

As per the requirement of the terms of reference, the TER has reviewed decisions made by regulators in other jurisdictions around Australia. Since our involvement in the process of consultation on this issue SOST has seen how governments direct regulatory bodies through their terms of reference. We believe that other governments in other jurisdictions could have used these to direct a particular determination from their regulators. We believe that through the terms of reference, the government has put far too much emphasis on other jurisdictions. It is unclear to SOST what the reason for this is and it is clear that the TER has seen passed this in the draft report. We urge the TER to continue with this.

SOST's position is that The Regulator should consider 4 points with regard to the decisions in other jurisdictions.

1. The governments in other jurisdictions are and continue to be under enormous pressure to recoup extraordinary large burdens of debt. The debt has come around from offering high premium feed in tariffs to encourage the uptake of rooftop solar. NSW has also put a huge burden on the retailers who have been asked to contribute to the "legacy costs" of the existing solar bonus scheme. We must ask ourselves why they did this. Was it because they saw the uptake of roof top solar aiding their renewable energy targets? It is worth noting that with over 1 million roof top solar installations in Australia, the need for construction of 3 coal fired power stations has been averted. It seems obvious that the government of the time saw the world trends of using solar generated power to contribute to their 20% renewable energy target. Because of this they offered huge incentives through premium FIT's and rebates to encourage the adoption of solar. Australia was aligning itself with other world jurisdictions which has and continues to implement rooftop PV as an important part of their energy makeup. What do know is that in Tasmania there is no burden of debt compared to other jurisdictions. The previous FIT arrangement has ensured that no burden of debt has been incurred. We urge the TER to consider the issues of debt in the other jurisdictions when choosing their level of attention to the FIT arrangement in other states. It is most important to understand that we can lead the country on issues like this instead of blindly following.

Aside from the "burden of debt" issue, what else makes Tasmania different from other jurisdictions and how does this relate to the level of FIT we should receive?

2. The wholesale arrangements in Tasmania going forward are completely different than other states in Australia. We do not have access to the spot market in the same way as other jurisdictions. We will have a regulated wholesale price for power. The retailers hands are tied with regard their cost of power. While we understand that the wholesaler must offer a range of products (in an attempt to simulate a free market), it is easy to see that with only one supplier and one wholesaler it will be hard for the retailers to compete as effectively in a free environment. With this in mind it is important to distinguish between the market

situations Tasmania compared to other jurisdictions. The terms of reference only speak about a financial advantage to the retailers. On the mainland we see the retailers are the ones who gain a financial advantage from sourcing power from PV rooftops. Following on from that the fact that transmission lines and equipment not used cannot be avoided because the cost are based on consumption. This system of charging for network costs is needed on the mainland because so many different wholesalers and distributors and retailers are using the infrastructure. We know that Tasmania has the same method of calculating the costs. But we don't have to. We only have one supplier, one wholesaler. We can change the system if we like. The wholesaler and distributor are government owned. We can put in transition arrangements and give them time to investigate and develop a new system of charging for transmission and distribution. Because, as you will read elsewhere in this submission, it is unfair for solar PV owners to pay for transmission and distribution that they don't use.

3. The issue of peak demand has been raised and much research from other jurisdictions has been raised as potential reasons for discouraging the uptake of rooftop solar. Coal fired power stations, as are used in most mainland jurisdictions, do not have the ability to store their electricity. It must be used immediately. In a hydro situation there IS flexibility in generation to meet the broad range of demand levels. PV solar seamlessly integrates with the hydro system. The concept is very simple. A KW/h of power produced on a rooftop is a KW/h of energy saved at the large scale generator (in our case Hydro Tas). Indeed it is recognised by experts world-wide that integrated renewable energy mixed with hydro electric schemes are the premium outcome for solar generated power as the premium storage option. With this simple concept in mind we can see that it IS possible to use rooftop solar to assist with peak demands. This is a completely difference scenario to other jurisdictions and cannot be ignored. We note that the TER in their draft report has stated that this does not necessary result in an advantage for Hydro Tas. SOST believes the drought event of early 2008 says otherwise. There was that situation where we had to import a massive amount of power from the mainland because the water levels were critically low. With a healthy participation in solar investment a drought event like that will never have to happen again. A continuing contribution by the renewable sector to the reduction of water usage over time will mean that at critical times, the reserves are there.
4. We understand that places like NSW have overcooked the FIT and are trying to recover their debts. Yet, on the other hand they are investing huge amounts of money in solar farms in places like broken hill, where a \$450m 150MW system will be completed in 2015 and be able to power 50,000 homes per year*. Surely this example validates solar as a legitimate power source of significance. This is in stark contrast to their earlier undervaluing of the FIT which discourages installation of rooftop PV. This is also in step with other jurisdictions across the world. Please see the news links at the end of this document to illustrate this.

*Giant solar power station for far western NSW, news article ABC online, Wed 31 July 2013

We hope that government and the TER can see that there is a huge opportunity for the encouragement of renewables in Tasmania. SOST acknowledges that being a leader in something requires a lot more work than following the rest of the country we believe that other jurisdiction do not have to be blindly followed because it is easier and they have done all the work for us.

As the TER says in the draft report,

“Whilst the Regulator notes that each of these items has been considered in other jurisdictions with similar conclusions, the Regulator considers it important to consider each item on its merits in the Tasmanian context.”

[p13, Draft investigation report feed-in tariffs – September 2013](#)

Transmission and Distribution Costs

“Conceptually, transmission costs can be avoided through the purchase of excess electricity generated by solar PV systems as less electricity is purchased from large-scale generators and consequently less electricity is transmitted through the transmission system to customers.”

p16, Draft investigation report feed-in tariffs – September 2013

Based on previous publication by Aurora it is understood that transmission and distribution cost make up almost half of the cost of power to consumers. This is significant and cannot be ignored.

SOST would like the TER, under the section in the terms of reference where the TER can consider “any other matter the Regulator considers relevant,” to consider the follow points:

“Section 9.1.3 of Aurora Distribution’s approved pricing proposal outlines the case in which Aurora Distribution may need to pay embedded generator’s avoided TUoS charges. Specifically, Aurora notes that “the National Electricity Rules require Aurora to pay avoided TUoS usage charges to embedded generators who have generated electricity and transmitted this energy into Aurora’s distribution network”

p16, Draft investigation report feed-in tariffs – September 2013

It is the government owned Distribution Company who will profit from avoided cost of transmission. The TER has acknowledged this in the draft report and has consulted with Aurora on this point. [Aurora’s response was that the avoided cost benefits all customers.](#) SOST believes these avoided costs belong to the embedded generators. The fact that no embedded generator is paid for this results in a clear profiteering situation. It also skews the true value of the power generated on the rooftops of PV owners and the price of power to everyone.

The argument that everyone benefits from avoided transmission cost does not fall under the terms ‘fair and reasonable’. This goes to the heart of fairness and cross subsidy. The benefit of avoided transmission and distribution cost belongs to the rooftop power producers. Sharing that benefit across the network results in cross subsidy and the TER should, in its determinations, reflect that in an increased FIT with the costs to be passed through to the Distribution Company.

Once again under the section in the terms of reference for the TER to consider “any other matter,” The Regulator should determine that these avoidable cost be credit to PV owners in the form of an increase FIT and then passed through the retailers to the distributor just as the transitional arrangement for the premium 1:1 FIT are right now. The TER is correct in its determination that the costs are not avoidable by the retailers. They are actually avoided by the distributor. There is a

clear and easy system for payments for this to be made to the appropriate people and then credited to the PV rooftop owner in the form of an increased FIT.

“Additionally, even if this changed in the future, Aurora Distribution, not retailers, would make direct payments to customers.”

P17 Draft investigation report feed-in tariffs – September 2013



Other regulators have determined that these costs are not avoided by retailer because their metering and billing systems do not allow for it. This is mainly because the infrastructure is used by so many different companies. This is understandable, but in Tasmania there is only one company and one arrangement needed. A simple payment from wholesaler to retailer. There are no implementation costs because the system of payment is already in place. The distribution company does not have to make payments directly to customers.

Networks costs are distinguished by Aurora on current power bills into two categories. Transmission is defined as the use of the high voltage power lines to take power from the generators to the distribution network. The distribution network is defined as the low voltage poles and wires and substations/transformers to carry the power to each premise's. Aurora shows these on the graph as 13.8% of the total cost of power is made up in transmission costs and 33.9% of the total cost of power is made up by distribution costs. This equates to a ratio of 28.931% of the network costs are transmission costs and 71.069% are distribution costs. Just as the regulator has determined that line losses are to be calculated and credited to the FIT, there can be no valid argument to exclude the high voltage transmission costs because there is no demonstrated use of this system. Therefore the only undefined level of demonstrated use remaining is for the component of unused distribution system. SOST estimates this to be in the order of 98%.

We urge the TER to ask for investigation by the distribution company into the amount of avoided costs based on the fact that rooftop embedded generation is distribution closed to the source. We ask that the investigation take into account the fact that power from rooftop solar is already refined and does not need any processing and also that the power uses very little of the transmission and distribution infrastructure. Once the avoided costs are quantified the TER can then determine the

increased FIT level for Tasmania. In the interim we ask that the TER determine an interim increased FIT until the actual costs can be quantified.

Avoided transmission and distribution cost can also be considered in just the same way as the NEM fees are considered. It is the retailer who pays less NEM fees as a result of power sourced from rooftop solar. NEM fees are charged to retailers and are based on their consumption. Avoided transmission and distribution gains are made by distributors in Tasmania. If the distributor was to pass through the advantage to the retailer then the retailers can pass through the advantage to the PV owner through an increased FIT.

What Constitutes Fair and Reasonable?

We recognise the minister's terms of reference clearly seek a certain path and outcome. However the following clause could not be avoided, otherwise fairness would have been severely called into question.

"In investigating and reporting on the fair and reasonable value of electricity exports from these customers, the Regulator is to take into account:

.....

the principle that feed-in tariffs should not result in any cross-subsidies between customers or customer classes; "

The simple notion that the FIT should not result in any cross subsidy between customers or customers classes is correct. The level of feed-in tariff should not result in the price of power rising so that non PV owners are paying for the cost of a feed in tariff. On the flip side, the price of power should not be such that it is reduced via subsidy from the fact that avoided cost are not being fair attributed to the sources from which they are derived. Simply put, it is inherently unfair that a PV owner subsidise a lower price of power through a reduced FIT just as a too high FIT should not be subsidised by non PV customers. This is why it is most important that the correct level of FIT be implemented and investigation be started into the quantity of advantage the distribution company will gain from reduced network and transmission use by fed in power from rooftops.

Network Benefits and Peak Demand

SOST considers that rooftop solar owner should have a portion of the FIT reflect the investment they have made to the infrastructure of our power system. This is an important factor for the TER to consider.

“increased uptake of rooftop solar PV systems will not necessarily lead to increased Basslink exports as the interconnecting cable may have already reached its operational capacity.”
p25, *Draft investigation report feed-in tariffs – September 2013*

With a higher participation rate, the contribution of rooftop embedded generation has the potential to give a great advantage to the state of Tasmania. Just because the current Basslink interconnecting cable may be utilized to its maximum potential doesn't mean we just stop growing. A significant increase in the participation of the community in solar production could allow for expansion of our export capabilities. We know that there is a huge demand for renewable generated power in other jurisdictions. We cannot be so short sighted as to say that because our current capacity is full that we should stop innovating and expanding. We know a second link to the mainland has been considered already and the contribution of an increased uptake of embedded generation coupled with more government investment in wind and tidal technologies cannot be ignored in this.

With this expansion in mind the use of increased capacity to export and increased participation in renewables does help to address the issues of peak demand. As the TER knows solar power is produced during the day when peak loads in Tasmania are low. This is where the importance of using our Hydro system as a form of storage is important. Being able to export at an increased level will allow the daytime peak production to increase the storage capacity of Hydro Tas for export. Peak summer times are when more electricity should be exported. This is where solar is at its best. The northern jurisdictions use more power in the summer and solar's peak production can be used at these times. We cannot take the simplistic view that because it isn't being done now that it can't be done in the future.

An increase FIT reflecting the investment by PV owners will encourage the power production industry to innovate and expand to fully utilize the production offered. A 20% participation rate for solar production would have a huge potential to contribute to the infrastructure of our power system.

It is inherently unfair to compare our jurisdiction to a mainland system of power generation that has no ability to save resources for power generation. Coal fired power stations must continue to operate at a consistent level regardless of the load on the system. Hydro systems can save resources when load is low. A kw/h generated locally using distributed generation systems is saved at the generators end.

The fact that large scale wind power generation is now installed and is being heavily adopted by Hydro Tas surely is a contradiction in terms of the PV argument, It is variable in delivery and similarly unpredictable when compared to Hydro or Coal etc.

Worldwide, it is enormous and along with PV solar farms from the small average sized PV fields outside most small towns in Poland, to the likes of the two Warren Buffet investments of \$1 bn and \$1.5 bn, we see that solar systems are not and unreliable power source. Rather they are becoming a much sort after investment from government and jurisdiction around the world.

Frequency Control of the Grid with Grid-connected PV Systems

Conventional power generation systems rely on the rotating inertia of large synchronous generators to maintain stability in the power balance and frequency control loops. The increasing penetration of inverter-connected distributed generation proportionally reduces the fraction of conventional stabilized power used in the distribution system. It is an open question whether the primary feedback loop related to frequency control would remain stable as the fraction of the distributed generation increases in a distribution system. We develop and analyze a control model of a grid-connected distribution system to determine the stability in response to disturbances from the grid, such as grid frequency variations. Our conclusion is that for tie-in inverter connection of distributed generation, the transients can remain stable and grid frequency disturbances will not be amplified as long as the inverter controller is well-tuned. This conclusion holds for a broad range of parameter values explored in this work percentage of the distributed generation penetration, power factor of the load, load power, transmission line impedance, LCL filter and PLL in inverter system

This coupled with the fact that Hydro generation has excellent rotational inertia, inferring very good frequency stability, is a good counter argument to the claim of potential grid frequency issues resulting in grid instability.*

Published in:

Power System Technology (POWERCON), 2012 IEEE International Conference

ABSTRACT FROM POWERCON INTERNATIONAL CONFERENCE OCT 30 – NOV 2 2012

https://www.google.com.au/url?sa=t&rct=j&q=&esrc=s&source=web&cd=4&cad=rja&ved=0CD8QFJAD&url=http%3A%2F%2Fieeexplore.ieee.org%2Fxppls%2Fabs_all.jsp%3Farnumber%3D6401360&ei=q-Q7UsKrLIXliAeaiYCwBQ&usq=AFQjCNFMWZVwLsrZRraT6HsgEXfdGSc0XPA

Calculating the FIT

SOST proposes that the formula for calculating the FIT for micro distributed generation systems to apply from January 1 2014 be as follows:

$$\text{FiTy} = \text{WEPy} \times \text{MLFy} \times \text{DLFy} + \text{NCAy} + \text{AEMOy}$$

Where:

FiTy is the regulated fair and reasonable feed in tariff in c/kWh

y is the period

WEPy is the wholesale electricity price in c/kWh from the 2013 Standing Offer Determinations.

NCAy is the portion of the network costs avoided by the Distribution Company and passed through to the retailer.

MLFy means the load weighted average marginal loss factor at the regional reference node for Tasmania for the relevant period as approved by the Regulator in the 2013 Standing Offer Determinations.

DLFy means the load weighted average distribution loss factor for the relevant period as approved by the Regulator in the relevant 2013 Standing Offer Determinations.

AEMOy means the forecast charge in c/kWh, as billed by AEMO for market participant and ancillary services fees presented in the 2013 Standing Offer Determinations.

The proposed FIT to apply for the period from 1 January 2014

Table 1.0

	1 January 2014
Wholesale Electricity Cost (c/kwh)	7.497
Multiplied by	x
Transmission loss factor	1.071
Multiplied by	x
Distribution loss factor	1.017
Plus	+
Network Costs Avoided (c/kwh)*	12.76
Plus	+
NEM Fees (c/kwh)	0.116
TOTAL FIT (c/kwh)	21.045

Source: 2013 Standing offer Determination for Retailer A and Retailer B – Report

*Based on 98% network cost avoided

Conclusion

We recognise the minister's terms of reference clearly seek a certain path and outcome. However the following clause could not be avoided, otherwise fairness would have been severely called into question.

"In investigating and reporting on the fair and reasonable value of electricity exports from these customers, the Regulator is to take into account:

.....

the principle that feed-in tariffs should not result in any cross-subsidies between customers or customer classes; "

We must look to the future and see that a thriving solar industry is a crucial part of the Tasmanian economy. A FIT which reflects the true value of the power generated by PV owners is one which must not only involve no cross subsidy, but also must not penalise a PV owner for contributing to the power system in Tasmania

The benefit of avoided transmission and distribution cost belongs to the rooftop power producers. Sharing that benefit across the network results in cross subsidy "between customer and customer classes". This breaches the integrity of the terms of reference and the TER should, in its determinations, reflect that in an increased FIT with the costs to be passed through to the Distribution Company. The method for passing through is already in place with the transitional premium FIT arrangements. There are no extra costs involved or infrastructure to be installed. Solar is a significant benefit to the small PV owners and adds to the Tasmanian economy overall.

Information Links



<http://www.abc.net.au/news/2013-07-31/giant-solar-power-station-for-far-western-nsw/4855944>

<http://www.gizmag.com/australia-solar-pv-plant/28541/>

<http://online.wsj.com/article/PR-CO-20130819-902192.html>

http://www.washingtonpost.com/local/solar-power-to-provide-about-10-percent-of-salem-va-medical-centers-electricity-needs/2013/09/11/0f5c503c-1b2b-11e3-80ac-96205cacb45a_story.html

<http://www.menafn.com/11756546-4a77-4d42-b1cd-765a71414017/Ministry-says-solar-feedin-tariff-level-to-stay?src=main>

<http://www.digitaljournal.com/pr/1468070>

<http://thinkprogress.org/climate/2013/09/15/2621331/solar-quarter/>

<http://www.sltrib.com/sltrib/news/56893328-78/state-energy-solar-utah.html.csp>

<http://cleantechnica.com/2013/09/19/nrdc-clean-energy-affordable-way-power-us/>

<http://www.wscountytimes.co.uk/news/local/huge-solar-farm-could-be-built-in-the-south-downs-says-cpre-chair-1-5510133>

http://www.business-standard.com/article/companies/areva-solar-s- maiden-project-to-be-commissioned-next-month-113092000524_1.html

<http://www.abc.net.au/news/2013-08-19/new-act-solar-farms/4896912?section=act>

<http://www.greenconduct.com/news/2013/07/30/growth-of-global-solar-and-wind-energy-continues-to-outpace-other-technologies/>

Request and terms of reference from Government:

[http://www.energyregulator.tas.gov.au/domino/otter.nsf/LookupFiles/132774_Letter from Hon Scott Bacon MP, Minster for Finance -](http://www.energyregulator.tas.gov.au/domino/otter.nsf/LookupFiles/132774_Letter_from_Hon_Scott_Bacon_MP_Minster_for_Finance_-_Request_and_Terms_of_Reference.PDF/$file/132774_Letter_from_Hon_Scott_Bacon_MP_Minster_for_Finance_-_Request_and_Terms_of_Reference.PDF)

[Request and Terms of Reference.PDF](http://www.energyregulator.tas.gov.au/domino/otter.nsf/LookupFiles/132774_Letter_from_Hon_Scott_Bacon_MP_Minster_for_Finance_-_Request_and_Terms_of_Reference.PDF/$file/132774_Letter_from_Hon_Scott_Bacon_MP_Minster_for_Finance_-_Request_and_Terms_of_Reference.PDF)

Regulated Feed-in Tariff for Tasmanian Small customers Draft Report:

[http://www.energyregulator.tas.gov.au/domino/otter.nsf/LookupFiles/133028 Regulated Feed-in Tariff for Tasmanian Small Customers - Draft Report.PDF/\\$file/133028 Regulated Feed-in Tariff for Tasmanian Small Customers - Draft Report.PDF](http://www.energyregulator.tas.gov.au/domino/otter.nsf/LookupFiles/133028_Regulated_Feed-in_Tariff_for_Tasmanian_Small_Customers_-_Draft_Report.PDF/$file/133028_Regulated_Feed-in_Tariff_for_Tasmanian_Small_Customers_-_Draft_Report.PDF)

Governments Submission re: First price determination under FRC:

[http://www.energyregulator.tas.gov.au/domino/otter.nsf/LookupFiles/131960 Government Submission First Retail Price Determination under FRC May 2013.pdf/\\$file/131960 Government Submission First Retail Price Determination under FRC May 2013.pdf](http://www.energyregulator.tas.gov.au/domino/otter.nsf/LookupFiles/131960_Government_Submission_First_Retail_Price_Determination_under_FRC_May_2013.pdf/$file/131960_Government_Submission_First_Retail_Price_Determination_under_FRC_May_2013.pdf)

TER standing offer Investigation Report:

[http://www.energyregulator.tas.gov.au/domino/otter.nsf/LookupFiles/132523_2013_Standing Offer Determinations - Report - PDF.PDF/\\$file/132523_2013_Standing Offer Determinations - Report - PDF.PDF](http://www.energyregulator.tas.gov.au/domino/otter.nsf/LookupFiles/132523_2013_Standing_Offer_Determinations_-_Report_-_PDF.PDF/$file/132523_2013_Standing_Offer_Determinations_-_Report_-_PDF.PDF)