New Energy Times

April 4, 2019

Commissioner Arias Cañete
European Commission

SUBJECT: Misleading ITER Fusion Reactor Power Claims by European Public Agencies

Dear Commissioner Cañete,

I have recently learned from MEP Michèle Rivasi that, on behalf of the European Commission, you responded to her written question about the false ITER fusion reactor power claims. Your response to Ms. Rivasi, however, is deficient because it contains factual inconsistencies.

Because Europeans are paying €10 billion for this science experiment, it is crucial that the promises and projections for this nuclear fusion reactor are described accurately by European public agencies.

On the matter of evaluating the performance of the ITER fusion reactor, you are correct that the accurate and honest method will be to compare the "thermal power output of the plasma and the thermal power injected."

In your response to Ms. Rivasi, you wrote that the ITER Organization has recently improved its Web site to make the scientific objective of ITER clear. On this matter, you are incorrect. Although the ITER Organization has made some corrections since I first notified Director-General Bernard Bigot of the false and misleading claims on his organization's Web site, Bigot has made only partial corrections. First, however I will address false and misleading claims in one of the two references you cited.

FUSION ROADMAP

In your response to Ms. Rivasi, your reference #2 identifies the following document: "Fusion Electricity — A Roadmap to the Realisation of Fusion Energy," EFDA, 2012, https://www.euro-fusion.org/wpcms/wp-content/uploads/2013/01/JG12.356-web.pdf"

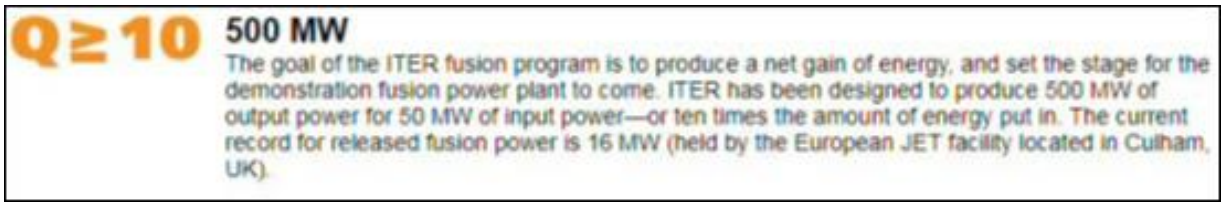
Page 9 of the "Roadmap" document contains the following claim:

> **"ITER, the world's largest and most advanced fusion experiment, will be the first magnetic confinement device to produce a net surplus of fusion energy. It is designed to generate 500 MW fusion power which is equivalent to the capacity of a medium size power plant. "**

There is no other place in the "Roadmap" that provides a more concise summary of a specific, measurable, expected objective of ITER than the paragraph cited above. In no way did the authors unambiguously associate the projected output with the plasma. The reverse is true. The authors (let's assume unintentionally) created the appearance that the projected output was associated with the overall reactor.

I have spoken with some of the "Roadmap" authors, including the lead author. All of them say that their intention was to associate the power values with the plasma, not the overall device. But as you can see, that's not what they did. This type of incorrect communication (due to incompetence or dishonesty) had been commonplace among fusion scientists but in the last two years they have begun to communicate ITER claims more accurately.

In the same year that the Roadmap was published, the ITER Organization had the following claim displayed on its Web site:



> "The goal of the ITER fusion program is to produce a net gain of energy, and set the stage for the demonstration fusion power plant to come. ITER has been designed to produce 500 MW of output power for 50 MW of input power—or ten times the amount of energy put in."

They did not use the terms "fusion energy" and "fusion power." Rather than rely on those ambiguous terms and their hidden secondary meanings to keep the statements honest, the organization made claims that were not only misleading but also false. This was not an isolated instance; this was the standard practice back then.

This deception has been in place for two decades. Here are two prominent early examples of the success of the deception:

> **U.S. White House Press Release**, Jan. 30, 2003: "If successful, ITER would create the first fusion device capable of producing thermal energy comparable to the output of a power plant, making commercially viable fusion power available as soon as 2050."
>
> **Robert Stern, *New York Times***, Jan. 31, 2003: "ITER would provide a record 500 megawatts of fusion power for at least 500 seconds, a little more than eight minutes, during each experiment. That would meet the power needs of about 140,000 homes."

The fusion scientists misled your organization and many others. Here are just a few other examples of the false claims for which they, directly or indirectly, are responsible:

- European Commission: "ITER will be the first experiment to produce significant quantities of fusion energy, significantly more than required to operate the machine."
- U.K. Atomic Energy Authority: "[ITER] will be the first fusion experiment to produce net power – ten times more than the amount required to heat the plasma."
- European Parliamentary Research Service: " ITER is designed to produce 500 MW of fusion power from 50 MW of input power (Q=10), or a ten-fold return on energy."
- FuseNet: "The fusion reactor itself has been designed to produce 500 MW of output power for 50 MW of input power, or ten times the amount of power put in."

The examples above have since been partially or fully corrected.

ITER ORGANIZATION

In your response to Ms. Rivasi, you wrote that "the website of the ITER organization now makes it very clear that the performance of ITER will be evaluated on the basis of 'Q fusion', ie by comparing the thermal power output of the plasma and the thermal power injected."

This is not true. In Appendix A, I list examples that show that the ITER Organization Web site is still publishing false and misleading ITER power claims.

SUMMARY

You have been extremely supportive of the ITER project. In your welcoming speech at the ITER Industry Day on Dec. 4, 2017, you spoke about the project enthusiastically: "a fascinating project and a crucial one for the future of energy," "a remarkable gift to future generations."

You also told the audience, "I want to show you that ITER and fusion are not about dreams and science-fiction but about hard facts. ... I hope to provide tangible evidence that investing in ITER is a wise business decision."

You spoke about the financial benefit provided by the European ITER domestic agency: "Over the last ten years, Fusion for Energy has directly awarded almost 1,000 contracts and grants for a value of approximately EUR 4 billion spread all over Europe."

However, at the same event, the European Commission also told attendees the lie. Your organization told the attendees that ITER would produce "500 MW of power from an input of 50 MW—a 'gain factor' of 10."

The European Commission has been, in a variety of capacities, deeply involved in this public scientific research program. The references in Appendix C provide a sampling of the activity of European Commission with the ITER project.

My efforts to assist your organization to correct the falsehoods, inform the appropriate parties of the truth, and hold accountable those responsible began with my e-mail to you on November 8, 2017.

In a year and a half, I have exchanged 18 e-mails with representatives of the European Commission. In addition to you, I've been in contact with Jean-Claude Juncker, president and commissioner; Massimo Garriba, director, Nuclear Energy, Safety & ITER, Directorate-General for Energy; Maroš Šefčovič, vice-president, Energy Union; Günther H. Oettinger, commissioner; Gerassimos Thomas, deputy director-general, Directorate-General for Energy.

Almost everyone in the European Commission leadership who has any responsibility for ITER knows the issue. This includes Dominique Ristori, director-general, Directorate-General for Energy, and Jan Panek, head of unit, ITER, Directorate-General for Energy.

I have gone to great lengths to clearly explain what is false and what is true about these scientific claims. You and your colleagues have done very little to correct them. Your response to Ms. Rivasi shows that you know exactly how to honestly represent the projected goal and outcome of ITER. But one year has gone by, and you have made almost no corrections.

The Commission continues to publish misleading scientific claims about ITER; so does the ITER Organization, Fusion for Energy, and the European Parliament. (See the appendices.)

I would expect that someone in your position, who strives to set the highest example of ethics and integrity, who is trusted by the citizens of Europe, and respected by the Members of the European Parliament, would immediately correct any outstanding misleading claims about this €20 billion ITER project.

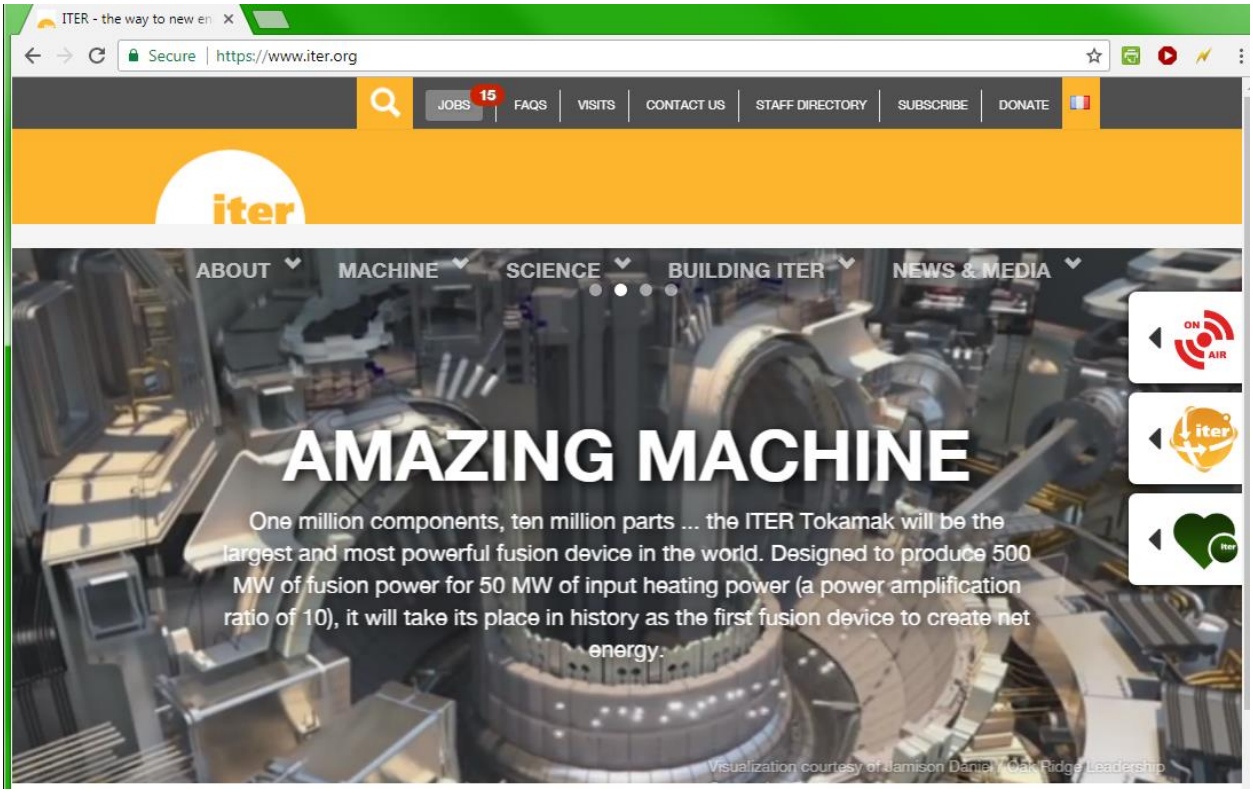
Would you kindly let me know your intentions right away?

Thank you,

Steven Krivit
Publisher and Senior Editor, *New Energy Times*

APPENDIX A: ITER ORGANIZATION

EXAMPLE 1
URL: https://www.iter.org/
IMAGE CAPTURE DATE: March 29, 2019



TEXT: "One million components, ten million parts - the ITER Tokamak will be the largest and most powerful fusion device in the world. Designed to produce 500 MW of fusion power for 50 MW of input heating power (a power amplification ratio of 10), it will take its place in history as the first fusion device to create net energy."

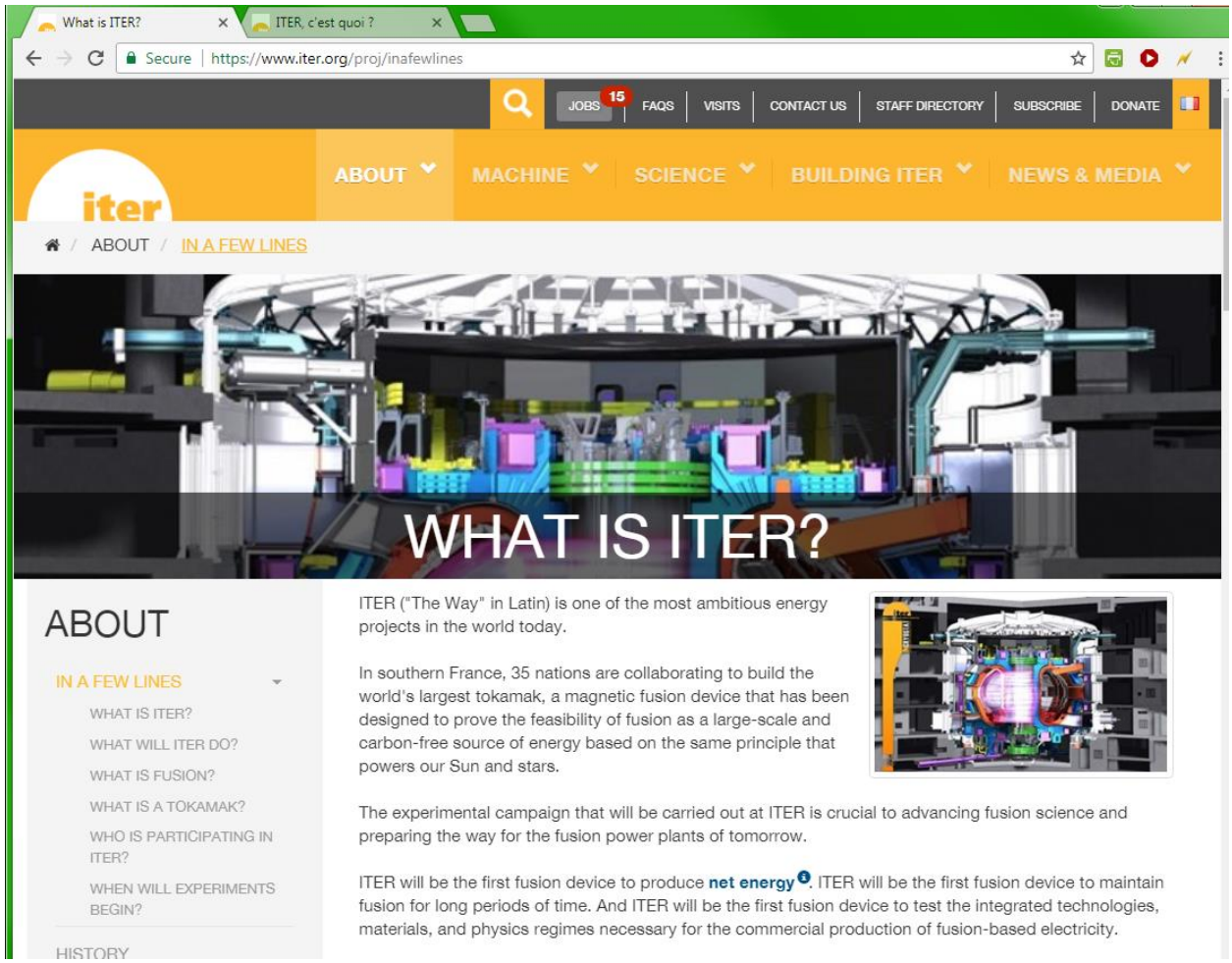
NOTES: The text fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input into the plasma. Instead, the text creates the strong impression that the overall reactor is designed to produce 500 megawatts of output power from only 50 megawatts of input power. This is a deceptive and fraudulent claim.

EXAMPLE 2
URL: https://www.iter.org/fr/accueil
IMAGE CAPTURE DATE: March 29, 2019

TEXT: "Un million d'éléments, dix millions de pièces... le tokamak ITER sera la plus grande et la plus puissante des machines de fusion jamais construites. Conçue pour amplifier d'un facteur dix la puissance qui aura été apportée à ses systèmes de chauffage (50 MW ➔ 500 MW) elle sera la première à générer une production nette d'énergie."

NOTES: Same problem as with EXAMPLE 1

EXAMPLE 3
URL: https://www.iter.org/proj/inafewlines
IMAGE CAPTURE DATE: March 29, 2019



TEXT: "ITER will be the first fusion device to produce net energy."

NOTES: Only when readers place their mouse over the words "net energy" do they learn the truth. The pop-up note says, "When the total power produced during a fusion plasma pulse surpasses the thermal power injected to heat the plasma."

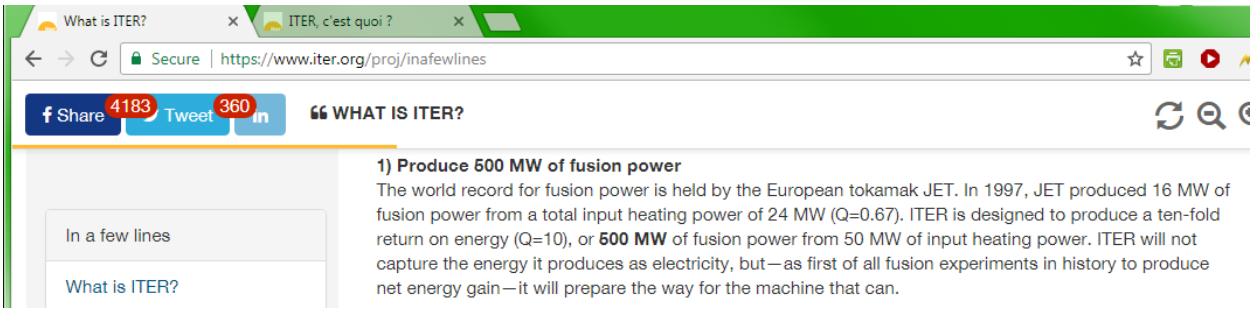
The visible text unambiguously creates the false impression that the ITER reactor will produce net power. The non-displayed text contradicts the displayed text. This is a fraudulent science claim, and it is deceptive and misleading.

EXAMPLE 4
URL: https://www.iter.org/fr/proj/inafewlines
IMAGE CAPTURE DATE: March 29, 2019

TEXT: "ITER sera la première installation de fusion capable de produire une quantité d'énergie nette."

NOTES: Same problem as with EXAMPLE 3

EXAMPLE 5
URL: https://www.iter.org/proj/inafewlines
IMAGE CAPTURE DATE: March 29, 2019



TEXT: "ITER is designed to produce a ten-fold return on energy (Q=10), or 500 MW of fusion power from 50 MW of input heating power."

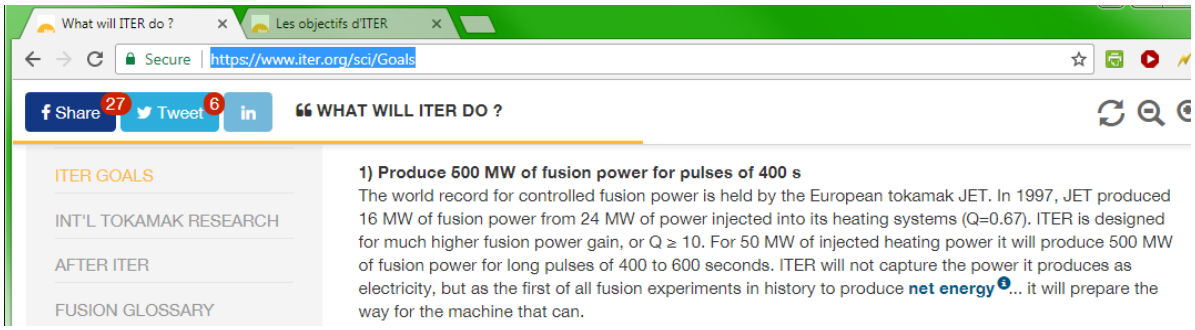
NOTES: The text fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input into the plasma. Instead, the text creates the strong impression that the overall reactor is designed to produce 500 megawatts of output power from only 50 megawatts of input power. This is a deceptive and fraudulent claim.

EXAMPLE 6
URL: https://www.iter.org/fr/proj/inafewlines
IMAGE CAPTURE DATE: March 29, 2019

TEXT: "Produire 500 MW de puissance de fusion - Le record de puissance de fusion produite est détenu par le tokamak européen JET. En 1997, cet tokamak a généré 16 MW de puissance de fusion pour une puissance de chauffage totale de 24 MW. Ce ratio (ou « Q ») de 0,67 devrait être porté à 10 par ITER — 500 MW de puissance de fusion pour une puissance en entrée de 50 MW."

NOTES: Same problem as with EXAMPLE 5.

EXAMPLE 7
URL: https://www.iter.org/sci/Goals
IMAGE CAPTURE DATE: March 29, 2019



TEXT: "ITER is designed for much higher fusion power gain, or Q ≥ 10. For 50 MW of injected heating power it will produce 500 MW of fusion power for long pulses of 400 to 600 seconds"

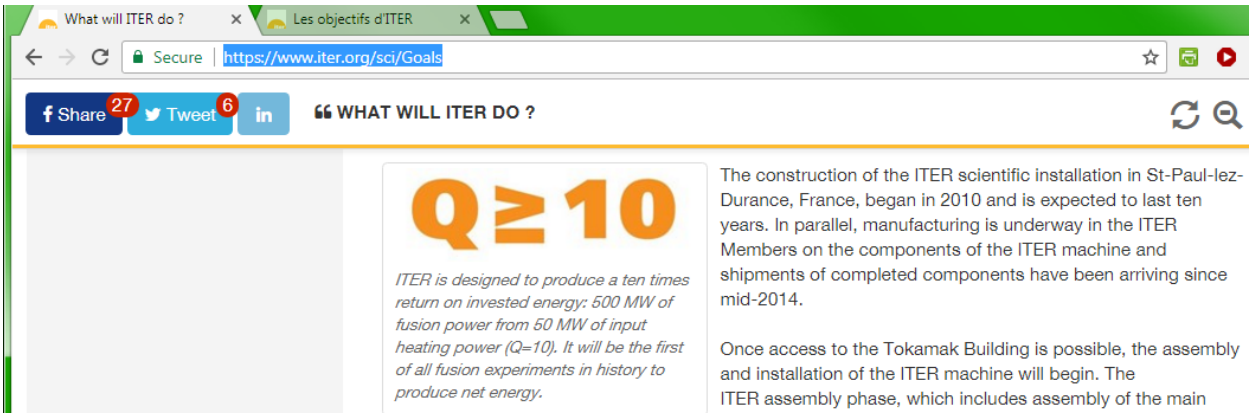
NOTES: The text fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input into the plasma. Instead, the text creates the strong impression that the overall reactor is designed to produce 500 megawatts of output power from only 50 megawatts of input power. This is a deceptive and fraudulent claim.

EXAMPLE 8
URL: https://www.iter.org/fr/sci/Goals
IMAGE CAPTURE DATE: March 29, 2019

TEXT: "Produire 500 MW de puissance de fusion pour 400 s - Le record de puissance de fusion produite est détenu par le tokamak européen JET. En 1997, ce tokamak a généré 16 MW de puissance de fusion pour une puissance de chauffage totale de 24 MW. Ce ratio (ou « Q ») de 0,67 devrait être porté à 10 par ITER—500 MW de puissance de fusion pour une puissance en entrée de 50 MW, pendant des périodes de 400 à 600 s, la première machine capable de produire une une quantité d'énergie nette. I

NOTES: Same problem as with EXAMPLE 7.

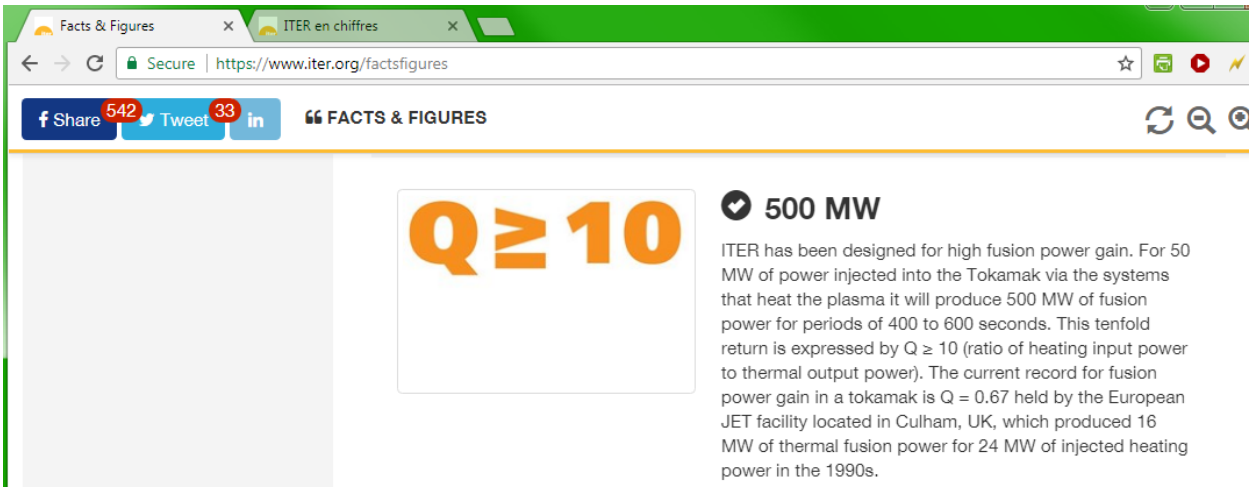
EXAMPLE 9
URL: https://www.iter.org/sci/Goals
IMAGE CAPTURE DATE: March 29, 2019



TEXT: "ITER is designed to produce a ten times return on invested energy: 500 MW of fusion power from 50 MW of input heating power (Q=10). It will be the first of all fusion experiments in history to produce net energy."

NOTES: The text fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input into the plasma. Instead, the text creates the strong impression that the overall reactor is designed to produce 500 megawatts of output power from only 50 megawatts of input power. This is a deceptive and fraudulent claim.

EXAMPLE 10
URL: https://www.iter.org/factsfigures
IMAGE CAPTURE DATE: March 29, 2019



TEXT: "ITER has been designed for high fusion power gain. For 50 MW of power injected into the Tokamak via the systems that heat the plasma it will produce 500 MW of fusion power for periods of 400 to 600 seconds. This tenfold return is expressed by Q ≥ 10 (ratio of heating input power to thermal output power). The current record for fusion power gain in a tokamak is Q = 0.67 held by the European JET facility located in Culham, UK, which produced 16 MW of thermal fusion power for 24 MW of injected heating power in the 1990s."

NOTES: This informs the public that the ITER reactor will produce 500 MW of power. It will not. It will produce a plasma with 500 MW of power. This informs the public that the JET reactor produced 16 MW of power. It did not. It produced a plasma with 16 MW of power.

EXAMPLE 11
URL: https://www.iter.org/fr/factsfigures
IMAGE CAPTURE DATE: March 29, 2019

TEXT: " Le programme de fusion ITER poursuit un double objectif: obtenir un gain énergétique net et préparer le futur réacteur de démonstration. ITER a été conçu pour produire 500 MW d'énergie pour des périodes de 400 à 600 secondes à partir d'un apport externe de 50 MW, c'est-à-dire pour générer dix fois plus de puissance qu'il n'en aura reçu (Q ≥ 10). Le record de puissance de fusion, détenu par le tokamak européen JET (Culham, Royaume-Uni), est de 16 MW pour 24 MW apporté (Q = 0.67)."

NOTES: Same problem as EXAMPLE 10.

APPENDIX B: FUSION FOR ENERGY

The European ITER domestic agency known as Fusion For Energy continues to publish false and misleading ITER power claims.

Understanding Fusion Web page

URL: http://fusionforenergy.europa.eu/understandingfusion/iter.aspx

TEXT: **From injecting a thermal input of 50 MW into its plasma, ITER will produce a thermal output of 500 MW for about 7 minutes.**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is expected to produce a 500 megawatt thermal output when, in fact, the reactor is expected only to produce a plasma with 500 MW of thermal power. The overall net reactor output is expected to be zero.

ITER Device Web page

URL: https://f4e.europa.eu/understandingfusion/iterdevice.aspx

TEXT: **[ITER] will be smaller than a conventional power station but is expected to produce up to 500 MW of thermal power.**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is expected to produce a 500 megawatt thermal output when, in fact, the reactor is expected only to produce a plasma with 500 MW of thermal power. The overall net reactor output is expected to be zero. It gives the false impression that the ITER reactor is expected to produce an output comparable to a conventional power station.

Tri-Fold Brochure-EN

URL:

http://fusionforenergy.europa.eu/downloads/mediacorner/publications/reports/research_action_en.pdf

TEXT: **ITER is a major international experiment with the aim of demonstrating the scientific and technical feasibility of fusion power and capable of generating some 500 million watts (MW) of fusion power continuously for up to 10 minutes.**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is expected to produce a 500 megawatt thermal output when, in fact, the reactor is expected only to produce a plasma with 500 MW of thermal power. The overall net reactor output is expected to be zero.

Tri-Fold Brochure-ES

URL:

http://fusionforenergy.europa.eu/downloads/mediacorner/publications/reports/research_action_es.pdf

TEXT: **Capaz de generar unos 500 millones de vatios (MW) continuadamente durante 10 minutos**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is expected to produce a 500 megawatt thermal output when, in fact, the reactor is expected only to produce a plasma with 500 MW of thermal power. The overall net reactor output is expected to be zero.

Fact Sheet

URL:

http://fusionforenergy.europa.eu/downloads/mediacorner/factsheets/2_Fact_sheet_Iter_light.pdf

TEXT: **It should generate some 500 MW of fusion power over periods of around seven minutes under conditions similar to those expected in an electricity-generating fusion power plant.**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is expected to produce a 500 megawatt thermal output when, in fact, the reactor is expected only to produce a plasma with 500 MW of thermal power. The overall net reactor output is expected to be zero. It gives the false impression that the ITER reactor is expected to produce an output comparable to an electricity-generating fusion power plant.

ITER-The Way - Postcard

URL:

http://fusionforenergy.europa.eu/downloads/mediacorner/publications/toolkit/postcard_iter_light.pdf

TEXT: **The ITER objectives are to demonstrate fusion as a future energy source, achieve steady fusion power production of 500 MW..."**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is expected to produce a 500 megawatt thermal output when, in fact, the reactor is expected only to produce a plasma with 500 MW of thermal power. The overall net reactor output is expected to be zero; as such, it gives the false impression that the ITER reactor is expected to demonstrate fusion as a future energy source.

Brochure-CAT

URL:

http://fusionforenergy.europa.eu/downloads/mediacorner/publications/reports/F4E_Leaflet_CAT.pdf

TEXT: **Pot generar uns 500 milions de wats (MW) d'energia de fusió contínuament durant un màxim de 10 minuts.**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is expected to produce a 500 megawatt thermal output when, in fact, the reactor is expected only to produce a plasma with 500 MW of thermal power. The overall net reactor output is expected to be zero.

2008 Annual Report

URL:

http://fusionforenergy.europa.eu/downloads/mediacorner/publications/reports/F4E_Annual_Report2008.pdf

TEXT: **ITER aims to produce a significant amount of fusion power (500MW) for about 7 minutes.**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is expected to produce a 500 megawatt thermal output when, in fact, the reactor is expected only to produce a plasma with 500 MW of thermal power. The overall net reactor output is expected to be zero.

2008 Annual Report, PART B

URL:

https://f4e.europa.eu/downloads/mediacorner/publications/reports/F4E_Annual_Report2008_Part_B.pdf

TEXT: **ITER, a fusion tokamak capable of generating 500MW of fusion power.**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is expected to produce a 500 megawatt thermal output when, in fact, the reactor is expected only to produce a plasma with 500 MW of thermal power. The overall net reactor output is expected to be zero.

Highlights 2015

URL:

http://fusionforenergy.europa.eu/downloads/mediacorner/publications/Highlights/Highlights_2015_Super_light.pdf

TEXT: **To produce 500 MW of power from an input of 50 MW - a gain factor of 10.**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is expected to produce a 500 megawatt thermal output when, in fact, the reactor is expected only to produce a plasma with 500 MW of thermal power. The overall net reactor output is expected to be zero.

Fusion and Industry Together For the Future

URL:

http://fusionforenergy.europa.eu/downloads/mediacorner/publications/reports/20090905_fusion_industry.pdf

TEXT: **Fusion reactions in ITER will generate around 500 MW of heat.**

FAILURE: This statement fails to unambiguously state that the projected thermal output of ITER is associated only with the plasma, rather than the overall reactor. It misleadingly suggests that the 500 MW thermal output is a net reactor output. It gives the false impression that the ITER reactor is expected to produce a net thermal output of 500 megawatt when, in fact, the overall net reactor output is expected to be zero.

Brochure-FR

URL:

http://www.fusionforenergy.europa.eu/downloads/mediacorner/publications/reports/iter_brochure_fr_light.pdf

TEXT: **ITER sera un tokamak capable de produire 500 millions de watts (MW) d'énergie de fusion en continu pendant un maximum de 10 minutes.**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is expected to produce a 500 megawatt thermal output when, in fact, the reactor is expected only to produce a plasma with 500 MW of thermal power. The overall net reactor output is expected to be zero.

ITER Uniting Science Today Global Energy Tomorrow Brochure (Page 13)

URL:

http://fusionforenergy.europa.eu/downloads/mediacorner/publications/reports/iter_uniting_science_today_global_energy_tomorrow_en.pdf

TEXT: **[ITER will be] capable of generating 500 megawatts of fusion power continuously for at least 400 seconds.**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is expected to produce a 500 megawatt thermal output when, in fact, the reactor is expected only to produce a plasma with 500 MW of thermal power. The overall net reactor output is expected to be zero.

TEXT: **The ITER experiment will generate 10 times more power than is required to produce and heat the initial hydrogen plasma.**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma.

ITER Uniting Science Today Global Energy Tomorrow Brochure (Page 23)

URL:

http://fusionforenergy.europa.eu/downloads/mediacorner/publications/reports/iter_uniting_science_today_global_energy_tomorrow_en.pdf

TEXT: **ITER is planned to operate at a nominal fusion thermal power of 500 megawatts.**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is expected to produce a 500 megawatt thermal output when, in fact, the reactor is expected only to produce a plasma with 500 MW of thermal power. The overall net reactor output is expected to be zero.

APPENDIX C: EUROPEAN COMMISSION

The European Commission continues to publish false and misleading ITER power claims.

Oct. 9, 2014 Press Release

URL: http://europa.eu/rapid/press-release_MEMO-14-570_en.htm

TEXT: **"Success of key infrastructure - ITER (with support of JET) - ITER is the largest fusion reactor currently under construction in the South of France in Cadarache. It will be the first magnetic confined fusion device which will produce more power than put into it (it is expected to provide 10 times more power than put into it)."**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is designed to produce ten times more power than it is designed to produce.

May 5, 2010 Press Release

URL: http://europa.eu/rapid/press-release_MEMO-10-165_en.htm?locale=en

TEXT: **"ITER will be capable of generating 500 million watts (MW) of fusion power."**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is designed to produce 500 MW of net thermal power.

2017 ITER Industry Day Event Programme

URL:

https://ec.europa.eu/energy/sites/ener/files/documents/programme_4_december_2017-12-02fin.pdf

TEXT: **"By producing 500 MW of power from an input of 50 MW—a "gain factor" of 10—ITER will be the stepping stone for future demonstration of the feasibility of commercial fusion power plants."**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is designed to produce 450 MW of net thermal power. It gives the false impression that the ITER reactor is designed to produce ten times the power it is designed to consume.

European Commission Nuclear Fusion Web Page

URL: https://ec.europa.eu/research/energy/index.cfm?pg=area&areaname=fusion

TEXT: **"ITER will be the first experiment to generate up to 500 million watts (MW) of fusion power."**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is designed to produce 500 MW of net thermal power.

Oct. 27, 2016 News Story "British Industry"

URL: https://ec.europa.eu/unitedkingdom/news/british-industry-amongst-winners-%E2%82%AC100m-eu-robotics-deal_en

TEXT: **"The state of the art equipment will form part of ITER fusion facility located in Cadarache, France, and the first in history to produce 500 MW."**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is designed to produce 500 MW of net thermal power.

Oct. 27, 2016 News Story "British Industry"

URL: https://ec.europa.eu/unitedkingdom/news/british-industry-amongst-winners-%E2%82%AC100m-eu-robotics-deal_en

TEXT: **"ITER is expected to produce during a fusion plasma pulse about ten times the input thermal power put into the plasma (estimated at 50 MW)."**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor — rather than the plasma — is designed to produce ten times the projected thermal power input to the plasma.

July 28, 2015 News Story "Research Boost"

URL: https://ec.europa.eu/programmes/horizon2020/en/news/research-boost-future-fusion-reactor

TEXT: **"Ultimately, ITER will produce the same amount of power as a gas-fired power station (500 MW), albeit for only a few minutes. This would prove that fusion could be a commercially viable source of energy."**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is designed to produce 500 MW of net thermal power. It gives the false impression that the ITER reactor is designed to produce the same amount of power as a gas-fired power station. It gives the false impression that the ITER reactor is designed to prove that fusion could be a commercially viable source of energy.

2011 Update - Nuclear Fusion Power Generation

URL: https://setis.ec.europa.eu/system/files/Nuclear_Fusion.pdf

TEXT: **"ITER will be the first fusion experiment to produce power gain, aiming for ten times more fusion power than input power into the plasma. Although the fusion power in ITER should reach some 500 MW for hundreds of seconds at a time, the investment required to produce very limited amounts of electricity is not worthwhile."**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor is designed to produce 500 MW of net thermal power. It relies heavily on the hidden secondary meaning of the phrase "fusion power."

APPENDIX D: EUROPEAN PARLIAMENT

The offices of the European Parliament continue to publish false and misleading ITER power claims.

The Impact of Brexit on the EU Energy System (Page 76)

URL

http://www.europarl.europa.eu/RegData/etudes/STUD/2017/614181/IPOL_STU(2017)614181_EN.pdf

TEXT: **"ITER is designed to produce 500 MW of fusion power from 50 MW of input power, i.e. a ten-fold return on energy."**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor — rather than the plasma — is designed to produce ten times the projected thermal power input to the reactor, rather than the plasma.

Briefing: How the EU Budget Is Spent

URL

http://www.europarl.europa.eu/RegData/etudes/BRIE/2017/608715/EPRS_BRI(2017)608715_EN.pdf

TEXT: **"JET has produced a quantity of 16 MW of output thermal power with an input thermal power of 24 MW"**

FAILURE: This statement fails to unambiguously compare the thermal power output of the plasma with the thermal power input to the plasma. It falsely informs readers that the overall JET reactor produced 16 MW of thermal power with only 24 MW of thermal power, rather than 700 MW of electrical power.

TEXT: **"ITER is designed to produce 500 MW of output thermal power compared to 50 MW of input thermal power required to heat the plasma"**

FAILURE: This statement fails to unambiguously compare the projected thermal power output of the plasma with the projected thermal power input to the plasma. It gives the false impression that the ITER reactor — rather than the plasma — is designed to produce ten times the projected thermal power input to the reactor, rather than the plasma.

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