The need for Scientific Revolution: 21st Century relevant Natural Climate Change Risks remain unmitigated

1. Earth’s ice age entry millennia ago and 21st century re-entry, and grand solar minimum related risks: (1) Earth entered a new ice age after the Holocene Climate Optimum, millennia ago. (2) Earth will ‘probably’ re-enter the ice age during the 21st century (P-value <0.05). (3) This current grand solar minimum period portends catastrophic natural climate change related risks that remain unmitigated.

2. Scientific refutation: The Intergovernmental Panel on Climate Change’s (IPCC) UNFCCC Article 1 and 2 dictated key-risk assessment, its inaccurate climate forecasts, and its underlying radiative forcing theory, as detailed in the Fifth Assessment Report (AR5) are scientifically refuted.

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Presentation Summary

Ice age entry 8,000yrs (Arctic) and 10,500yrs ago (Antarctica) – after the Holocene Climate Optimum (HCO)

• Significant ice build up started 5 millennia ago and peaked during the Little Ice Age – subsequent melt initiation preceded hypothetical AGW.
• This ice age inception is the slowest to decline in temperature in 800Kyrs (Antarctica) and 2 million years (Global): 3.1°C & 1.3°C above ave.

Expect a 21st century ice age re-entry (-2°C within 40 years, P-value <0.05)
• Outlier Arctic warming phases always switch to a ‘cold mode’ and abruptly fall in temperature.

High forecast inaccuracy (1986-2016) refutes the IPCC’s theory and its UNFCCC Article 2 dictated key-risk assessment

The IPCC disoriented our glacial cycle bearing

• Arctic/Northern Hemisphere/Global warming started in the early 18th century - AGW hijacked/rebranded natural climate change
• Global temperatures declined 0.47°C since early 2016’s peak – falsifying AR5’s 2016-2035’s forecast of a 0.3°C-0.7°C increase.
• Used climate indices that have been systematically altered, which accentuates recent global warming (MetOffice/CRU, NOAA, NASA).
• Changed the ice age boundaries (start and end), and failed to emphasize the ice build up after the climate optimum (“neoglaciation”).

The IPCC dismissed/omitted natural climate change risks relevant to this grand solar minimum: (1) a cold climate, (2) glaciation, (3) climate-forcing volcanism, (4) rapid climate change, and (5) pandemic influenza (and other epidemics)
• Catastrophic 21st century natural climate change risks remain unmitigated

Natural Climate Change
Preceded UNFCCC Article 1’s Definition for Climate Change (1988)

Natural climate change = Temperature oscillations evident over multiple timescales with varying causations

- Epochs (137 million years), glacial cycles (93Kyr), millennial, centennial, decadal, annual, seasonal, intra-seasonal, daily.

UNFCCC Article 1 definition of climate change hijacked/rebranded natural climate change 30 years ago

- “Climate change means a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.” (page 7&9 http://bit.ly/2FIr16L).

Glacial cycles: ave. 93Kyr long, interglacial period 18Kyr, and rise 14°C and 120+m sea levels

- Climate Optimum peaks are specifically phased: Antarctic > Arctic > Global (IPCC 30Kyr ice age delay is statistically refutable – Slide 23).
A new ice age started between 8Kyr (Arctic) and 10.5Kyr ago (Antarctic)

- Arctic: 4.86°C decline in temperature between 5980BCE and 1700CE i.e., 20% of an interglacial temp rise
- Antarctic: 4.56°C decline in temperature between 8577BCE and 1738CE

Northern Hemisphere temperature decline paralleled a 40-50W/m2 decline in solar irradiance since the HCO (@650N)

The Ice Age Started Millennia ago after the Holocene Climate Optimum (HCO)

From the last glacial maximum 20Kyr ago to the HCO: The Arctic/Northern Hemisphere ice mass changes accounted for 87% of interglacial global sea level changes (Bintanja NOAA/#11933)

Publications: Precession modified solar irradiance declined 40 -50W/m2 @650N since the HCO, paralleling the temperature decline
http://bit.ly/2XqP8Vg
http://bit.ly/2EvQj1e
Lowest Decline in Temperature after a Climate Optimum Compared with all Glacial Cycles in 800,000 & 2,000,000 years

The 21stC represents the lowest decline in temperature after the climate optimum of all glacial cycles in 800,000 years (Antarctica) and 2 million years (globally) – the slow ice age inception trajectory preceded putative AGW

Currently 1.3°C (global) to 3.1°C (Antarctic) higher than glacial cycle average T°C for this stage of our ice age inception

9/22/19

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Ice expansion from 5Kyr ago - after the Holocene Climate Optimum (HCO) - Peaked during the Little Ice Age

- Peaked during the Little Ice Age

Holocene Climate Optimum (Arctic, Antarctic): Warmer than 2019
- Ice expansion accelerated in 2nd millennia CE - peaked during the Little Ice Age, and its melt initiation preceded AGW
- Arctic: 2-4°C higher and ice sheet margins behind today, LIA winter sea ice closed off Scandinavia-Greenland sea routes
- Antarctica: inner domes 100m higher today than at the HCO

Ice accumulation paralleled the 40-50W/m2 decline in solar irradiance and NH-summer temperature

Publications: Precession modified solar irradiance declined -40 to -50W/m² @650N since the HCO, paralleling the temperature decline
http://bit.ly/2XqoBVg
http://bit.ly/2IU41pa
http://bit.ly/2Ev0j1e

Glacier fluctuations over the last 2000 years


Publications: Polar Ice Changes since the HCO
http://bit.ly/3189w8T
http://bit.ly/2Xn1hUt
http://bit.ly/2fOk3hJ
http://bit.ly/2QHnuFd
http://bit.ly/2Ks0yxt
Centennial-scale drift ice changes correlate with solar activity (Be10 and C14 proxies; magnetized solar wind mechanism)

- IRD proxies reflect advection of cooler ice-bearing surface waters eastward from the Labrador Sea and southward from the Nordic Seas
- Bond events (peaks in ice rafting debris %HSG) are associated with declining long term solar activity (Be10)
- Abrupt shifts in the drift ice can occur over short periods (<1 time interval or 70 years)
Cold climates always follow a grand solar minimum period

- A magnetized solar wind mechanism is implied (http://bit.ly/2kGj375)
- Northern Hemisphere temperature lags solar activity by ≈ 1-1.5 11-year solar cycles

Grand solar minimum and volcanism synergize the cold (via atmospheric/ocean circulations, and a multi-decadal Arctic ice expansion mechanism)
The Arctic warming phase initiated in 1700CE is the most extreme outlier in 8,000 years

- Cooling always follows warm phases: outlier Arctic warming phases decline 2°C (abruptly) within 4 decades (P-value <0.05)
- The second most extreme Arctic warming phase occurred just before the collapse of ancient Egypt’s Old Kingdom, the Akkadian empire, and Indus Valley Culture (4.2 kiloyear rapid climate change event).

The Arctic region dominates glacial cycle sea level and ice changes – Key to 21stC climate predictions (ice age re-entry)
Climate follows Solar Activity, and CO2 Lags the Temperature

Northern Hemisphere temperature lags solar activity (electromagnetism; TSI and magnetized solar wind; Beryllium\(^{10}\))

- Solar activity connects with the climate system via multiple mechanisms: (1) Secular changes in solar irradiance impact earth’s radiation budget (immediate) and ocean heat content and circulations (lagged), (2) Length of day; atmospheric/ocean circulations (lagged), magnetospheric-stratospheric-polar atmospheric circulations (lagged) (see https://grandsolarminimum.com/scientific-publication-hyperlinks/)

- CO2 does not follow the temp oscillations - no correlation analysis was provided by the IPCC to justify its radiative forcing theory

Impact of solar magnetism and secular changes to solar irradiance on climate change were ignored/dismissed by the IPCC

PUBLICATIONS: CO2 rise lags behind the temperature rise
http://bit.ly/2Weij0P
http://bit.ly/2wECuPX

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Grand Solar Minimum Pose Climate-forcing Volcanism Risk (1)

Grand solar minima and maxima of sunspot numbers pose an increased risk for climate-forcing volcanism

- 56/73 large eruptions (<-5W/m2) in 11,000 years occurred ±1 decade of a grand solar minimum or maximum (87% ±2 decades)
- Sunspot numbers derived from terrestrial tree rings measuring C14 (indicating a solar magnetism-related mechanism)

Grand solar extremes (i.e., magnetized solar wind) putatively act as a “climate oscillator” through volcanism (<-5W/m2)

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Volcanism during GSMin periods – The Little Ice Age and 8.2kyr rapid climate change event

- Climate-forcing volcanism associated with grand solar minima (GSMin)/maxima or on entry into a GSMin
- Climate-forcing impact = immediate radiative forcing impact (aerosols), atmospheric blocking, Arctic ice expansion mechanism (multi-decadal to centennial-scale)
21st Century Climate-Forcing Volcanism Cannot be Dismissed (IPCC in AR5)

Climate forcing volcanism during the Little Ice Age intensified (Catastrophic)
- Disastrous for global agriculture: cold (1-3yrs), ice (10-100yrs), drought and flooding (1-2yrs)
- VEI 7 / <-10W/m² can block the sun (1-2yrs), cool (2-10yrs), Arctic ice expansion (10s-100yrs)

Climate-forcing volcanism is a 21stC key climate risk (IPCC dismissed its prospect)
- Kobashi data and LaMEVE/VOGRIPA data confirm climate-forcing volcanism can’t be ignored
Grand Solar Cycles modify the 11 year Sunspot number cycle - Natural Climate Change (Oscillator)

Solar activity in Decline after the Holocene Climate Optimum

**Yearly Mean Sunspot Number**

- Yearly mean sunspot number
- Recognized Grand Solar Minima Periods
- 11 per. Min.-Max. (Yearly mean sunspot number)
- Mauder min.
- Dalton min.
- Glassberg min
- 21stC Solar cycle 23
- GSMin entry

**Yearly mean total sunspot number**

- 0 to 300
- Mauder min.
- 21stC Solar cycle 23
- GSMin entry
- Solar cycle 24 due to end 2019
- 2018 7 sunspots

- 0 to 300

**Recognized Grand Solar Minima Periods**

- Mauder min.
- Dalton min.
- Glassberg min

**21stC**

- Solar cycle 23
- GSMin entry

- Solar cycle 24 due to end 2019

**2018 7 sunspots**

**Solar activity depicts 11yr and GSMin/max cycles**

- Terrestrial C14 and Be10 proxy solar EM and magnetism

**Solar activity drives centennial-scale climate change**

- Climate lags solar activity: irradiance and Be10 mechanisms. Magnetism putatively linked to atmospheric/ocean circulations, climate-forcing volcanism (see publications https://grandsolarminimum.com/scientific-publication-hyperlinks/)
A 21st century Grand solar minimum and Little Ice Age-like climate predicted by numerous solar activity experts (omitted by IPCC in its key-risk assessment)

- Based on empirical modeling of solar activity cycle periodicities ± planetary impact on solar cycles ± shared climate periodicities
- Grand solar minimum range: 2020–2070 CE, associated with a Little Ice Age-like climate

Impact of GSMin associated climate forcing volcanism not included (Arctic ice expansion mechanism)
A Grand Solar Minimum ‘plus’ it’s Cold Climate/Ice Expansion

Represent a High Risk period for Pandemic Influenza Outbreaks

Pandemics frequently associate with 11yr TSI anomaly peaks & troughs ±1yr
colder Northern Hemisphere temperatures

- Pandemics bias peaks & troughs of total solar irradiance (TSI), cosmic ray intensity (CRI), & sunspot numbers, plus colder Northern Hemisphere temperatures and Arctic ice expansion
  - Pandemics at peaks and troughs: sunspot number (74% ±1yr), TSI (82% ±1yr), CRI (82% ±2yrs)
  - Specific thresholds associated with pandemics: (-ve) NH and Greenland ice core Ts & -ve TSI anomalies, and (+ve) CRI anomalies and Ice Accumulation rates
  - Correlations (r>±0.97, P-values <0.05, 3-5 centuries): ave. pandemic interval per century or #pandemics/century, and the Greenland temp, Arctic ice Accumulation Rate and Sea Ice Cover, NH temp, TSI, CRI

Data: Sunspots http://bit.ly/2EkTLSk, 35
Pandemic outbreaks Chp14 rel. Chp14 Revolution: Ice Age Rev.
Entry figures 14.1.1 to 14.1.3 http://amzn.to/2PyQsxV

Pandemic influenza outbreaks associate with sunspot number peaks & troughs ±1yr

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WHO promotes a global pandemic influenza vaccine strategy that leaves the world unnecessarily vulnerable to a pandemic

WHO/Govs/Industry can’t equitably immunize the population before a pandemic peaks = an unnecessary problem

Prepandemic influenza vaccine prototypes using MF59C.1/AS03 adjuvants promote “broadly cross-reactive antibodies”

- Offers a counter to viral mutation with heterologous boosting (of CVVs), a flexible booster interval (up to 6yrs), removes much immunization off the critical path, and permits the stockpiling of herd immunity. **Reminder:** Vaccines are meant to be used before a disease outbreak.

- The need to wait for an influenza pandemic outbreak before immunizing people is **obsolete and ignores vaccine industry leaders’ advice**

- Read Chapter 14 of “Revolution: Ice Age Re-Entry” to understand the keys issues and the solution to our **enforced pandemic flu vulnerability**


- **Isabel Leroux-Roels, et al.** Broad Clade 2 Cross-Reactive Immunity Induced by an Adjuvanted Clade 1 rH5N1 Pandemic Influenza Vaccine. PLOS. Published: February 27, 2008. https://doi.org/10.1371/journal.pone.0001665.


IPCC Theory and Key-Risk Assessment
Refuting Facts and Disclosures

This section details:

1) The IPCC’s highly inaccurate climate forecasts spanning 3-decades: This inaccuracy refutes the IPCC’s UNFCCC Article 1 and 2 installed radiative-forcing theory, and invalidates its Article 2 dictated key-risk assessment (5th Assessment Report).

2) Today’s global warming started in the early 18th century - long before significant human CO2/GHG emissions.

3) Global temperatures at all latitudes and altitudes have been in decline since early 2016.

4) US/UK Government agencies altered the climate data indices, which accentuated global warming.

5) The IPCC erroneously changed the ice age boundaries (start and end), which veils catastrophic risks.

6) Limited proven oil and gas reserves: (1) drives the need to Decarbonize our economies (levered by AGW fear-mongering), (2) invalidates the IPCC forecasts and its ice age delay assumption.

7) The IPCC dismissed/omitted catastrophic natural change risks relevant to the 21st century from its key-risk assessment (i.e., it eliminated contestation to its climate forecasts, 4 RCP scenarios, and key-risk assessment).
Anthropogenic Global Warming Hijacked Natural Climate Change

‘Climate Change’ since 1880 CE is a ‘fragment’ of an earlier starting Arctic / NH warming phase (starting 17-18th century)

Widespread thermometer use since c.1880CE is used as an excuse to ignore climate proxy data (supposed “Accuracy”)

- Climate indices altered - accentuating global warming (Slide 20) - undermines the ‘accuracy’ of HadCRUT4, NASA, NOAA thermometer data

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Temperatures have declined between 2016’s peak and mid-2019 (Global, hemispheric, and all troposphere layers at all latitudes and at both Poles)

IPCC forecasted a 2016–2035 global mean surface temperature rise of 0.3°C to 0.7°C (“medium confidence” AR5)

- The IPCC unrealistically “assumed there will be no major volcanic eruptions or secular changes in total solar irradiance.”

Since 2016 global surface temperatures decline 0.4-0.57°C while CO2 increased 2.8% (CO2 data http://bit.ly/2MBpXWD)

- This post-2016 inaccuracy exacerbates the IPCC’s 30 year legacy of high forecast inaccuracy (see slide 22)
Government agencies altered climate indices - Accentuated global warming  
Unfit for policy sensitive decision making (Heartland Institute)

Climate data cunningly altered between old and new versions (used by the IPCC in AR5)

- Switching to new datasets: significant changing of stations, time of observation, errors/missing data, population growth/heat island effect, site location (airports, oceans), new measuring technology etc.
- IMPACT: reducing pre-1970/40 and increasing post-1970 temps

Government agencies are the biggest cause of ‘anthropogenic’ global warming
IPCC’s Radiative Forcing Theory Refuted – Highly Inaccurate Forecasts 
Undermines the validity of its Article 2 contrived-dictated Key Risk Assessment

Climate forecasts are highly inaccurate (1984-2012, plus since 2016)

- 97% over-forecasted GMST 1998-2012: “an analysis of the full suite of CMIP5 historical simulations reveals that 111 out of 114 realizations show a GMST trend over 1998–2012 that is higher than the entire HadCRUT4 trend ensemble.”
- 100% missed climate hiatus 1998-2012 while CO2 increased 8%
- 84% under-forecasted GMST 1984-1998: “whereas during the 15-year period ending in 1998, it lies above 93 out of 114 modelled trends”

IPCC was unable to forecast multi-annual- to decadal-scale climate oscillations – GMST declines while CO2 rises

- Correlation analysis does not support a CO2-GMST cause and effect relationship (see slide 10)

Revisions were made to AR5 forecast inaccuracy analysis (attempting to change the conclusion). Key points to note:

- Revisions nigh eliminated the Hiatus
- Climate index comparators changed (both providers & versions)) (apples v oranges)
- Data comparators used base year comparators from different periods (apples v oranges)
- Ignores the 0.47°C decline in global temperature since the Q1-2016 peak
- See Climate Lab Book for revised graphic: http://bit.ly/2KL1o9z
IPCC Changed the Ice Age Boundaries (our ‘systematic’ glacial cycle disorientation)

IPCC delayed next ice age by 30,000 years (falsifiable)
- Creates statistically significant outliers & non-normal data distributions
- Impacts: inter-climate optimum interval, Antarctic-to-global climate optimum phasing gap, and interglacial duration (over 1-2 million years)

Claim the last ice age ended ‘about 10Kyr ago’ (incorrect)
- By 10Kyr ago sea levels had risen 80% (ice reduced 80%) and the global temperature risen 90% of their total Holocene Interglacial rise (NH/Arctic 87% contribution = importance of Arctic to climate change)

Focused on a post-1880 warming phase initiated in the 1700s that ignores the Polar 5°C decline between the HCO and 1700
- HadCRUT/GISS/NOAA temperature index alterations versus paleoclimate data - which is more “accurate” (i.e., not fabricated)…?

See section #2 of the Scientific Refutation of the IPCC key-risk assessment (and endnotes 30-86 via http://bit.ly/2kYwWNP)

IPCC claimed Robust Findings: “It is very unlikely that the Earth would naturally enter another ice age for at least 30,000 years.” (false)
“It is virtually certain that orbital forcing will be unable to trigger widespread glaciation during the next 1000 years…” (false)
EIA and BP data tell the same story: 50-55 years of proven oil and gas reserves, 130-140 years of proven coal reserves

“Peak oil and gas discovery” is history: based on global Reserves-to-Production being <100% for most of the last 38 years

• Oil reserve depletion in progress: 27/38yrs and 10 of the last 14yrs the Reserves : Production ratio was <100% (i.e., reserve depletion)
• Gas reserve depletion in progress: 19/38yrs and 11 of the last 13yrs the Reserves : Production ratio was <100%

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Unproven Reserves (if real) Might Double Oil & Gas Timelines

Unproven oil and gas reserves might double reserve timelines

• Proven Oil 55yrs (unproven reserves +57yrs) – assumes no growth or cold.
• Proven Gas 50yrs (unproven reserves +120yrs) – ditto.

US Energy Information Administration (2013 update)

• Global: 50% of oil and 70% of gas reserves are “unproven”
• Shale resources included (largely unproven): account for 1/3rd of world gas and 1/10th of world oil reserves.
• “technically recoverable resources” - apply historic US shale oil and gas recovery rates to foreign petroliferous basins with similar geophysical characteristics (i.e., **unconfirmed by production tests**).

Other reserve estimates

• Surprisingly sparse literature: shift from ‘peak production’ to ‘adequacy of supply’ - obfuscates a future energy crisis.
• IPCC stated reserves: 2007 (“decades”) and 2014 (70 years) – Confirms. they know our predicament (**motivates Decarbonization policies?**)  
• Rystad Energy 2018: 70yrs oil (recoverable oil reserves 2092 billion bbl). Shale 1/3rd and off-shore 1/3rd of global reserves (requires higher prices)
IPCC Dismissed/Omitted/Veiled Natural Climate Change Risks in its Key-Risk Assessment (Potential for 21st century GENOCIDE)

5th Assessment Report 2014

High forecast inaccuracy refutes
- IPCC Radiative forcing theory and climate forecasts
- Validity of the IPCC Key-Risk Assessment

Key-risks assessed only those relevant to Article 2 (100% AGW biased)

AGW key-risk mitigation linked only to emission reductions

Enforced our glacial cycle disorientation
- Unilaterally altered the ice age boundaries to eliminate AGW contestation (start and end)
- Focused on a post-1880 temperature fragment of a warming phase initiated in the early 1700s
- IPCC relies on fabricated climate indices that accentuate global warming (MetOffice/CRU, NOAA, NASA)
- Ignored Ice Age inception significance of the Polar glacier expansion after the Holocene Climate Optimum

The UNFCCC Article 1 & 2 dictated Key-risk assessment could constitute an act of Genocide

Dismissed or omitted near term rapid climate change from its key-risks

Dismissed/omitted 21stC relevant natural climate change key-risks
- Grand solar minimum linked Cold and Glaciation
- Climate-forcing volcanism (Big eruptions)
- Rapid climate change
- Pandemic influenza

Dismissed the catastrophic history of the Little Ice Age & post-HCO rapid climate change events (lessons irrelevant for today)

See the fully cited scientific refutation document (IPCC Article 1 & 2 dictated key-risk assessment and its Incriminating IPCC disclosures)

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