

"Global Carbon Budget the reality" 09/1/17, 25, 27

*Who's willing to try to save a world destined to die !!!-Marvin Gaye(1971)

*Jamping Jackflash, it's a gas, gas, gas. -Rolling stones(1968)

*Poem "Vers la Flamme (Toward the Flame, 1914)" by Alexander Nikolayevich Scriabin

*3.4: Risk of abrupt or irreversible changes anthropogenic warming could

lead to some **impacts** that are **abrupt** or irreversible, depending upon the rate and magnitude of the climate change. -IPCC(2007).

<http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf>

① Global Carbon Budget=Unless 80% reduction, the recovery is no more hope!!.

<http://www.globalcarbonproject.org/global/pdf/GCP_CarbonBudget_2007.pdf> (p19).

(1)carbon budget :

| | |
|--|--|
| fiscal (man made+natural) emitt and (oceans+land) sink by photosyntheis . | |
| +man made emission=7.5PgC/y | P=10 ¹⁵ . C is carbon standard. |
| +natural emission =1.5PgC/y. | For example) |
| —Oceans sinks =2.3PgC/y | CH4=16g, but C=12g. |
| —Land sinks =2.6PgC/y | CO2=44g, but C=12g. |
| <hr/> | |
| +atmospheric accumulation=4.2PgC/y | |

(2)Target reduction amount=atmospheric accumulation+natural emission

$$=4.2\text{PgC/y}+1.5\text{PgC/y}=5.7\text{PgC/y.}$$

(3)Target reduction rate=Target reduction amount/man made emission

$$=5.7/7.5=0.76=80\%!!!!\circ$$

(4)Reason including even **natural emission** in the reduction rate is as follows.

In the global climate enviroment, there is **overwhelming hudge heat capacity of oceans**, of which response is too slow for GHG change due to its hudge momentum. Even if we cutted only amount of atmospheric accumulation (then the budget certainly become balance), **natural emission** would increase by the ocean momentum which dominate the global actual temperature at all !!!.

Thus this method could not completely cutt off the vicious feed back action.

It's the kernel point to **recover stable climate state of nothing temperature up.**

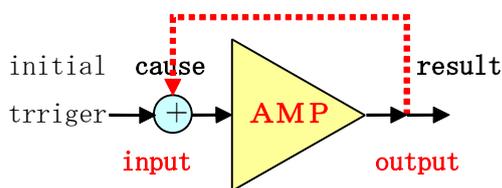
Feed back action is that **a result enhance its cause**, so once this mechanism had acted, the looping action accelates its result until encountering its suturation state. To tell it as for climate change, **the suturation is catastrophic.**

☞:What would you do to stop mammoth tanker to abrupt turning,you may switch to reverse rotation of screw,however for the time being,the tanker could not stop.

☞:So long as natural source emission increasing would continue,it is also GHG increasing,so temperature rise never be stopped due to feedback.Thus it is the feed back that would cause our catastrophe the dammed evil.

②Abrupt Methan Catastrophe the POSSIBILITY:

If it be appropriately gradual temperature rise,humannkind could survive by adaptation for the change,but if it be abrupt change becoming catastrophic due to **positive feedback process**,the hope would be in vain.A kernel is feedback.



AMP is amplifying mechanism. Note feedback dotted line. Then **positive feedback** is that result enhances its cause. Consequently result shall increase **explosively**.

☞:AMP is amplifying mechanism which input temperature rise ΔT_i and induce GHG(green house gas)eruption increase $\Delta G = B \cdot \Delta T_i$ of natural source such as methan-ice in shallow Arctic continetal shellves with **finite time delay**. Then ΔG enhances instantly temperature rise $\Delta T = A \cdot \Delta G = AB \cdot \Delta T_i$ once again.Thus,T would go then rapid rise toward saturation point of catastrophic. Our relieve is unique to make $\Delta G < 0$.

③Still even now,reliefing method be by global consensus on **WAR TIME REGIME**.

In anyway,we could still consume carbon energy of 20% in minimum livelihood. Certainly it is outrageous for wasteful people in advanced nations,

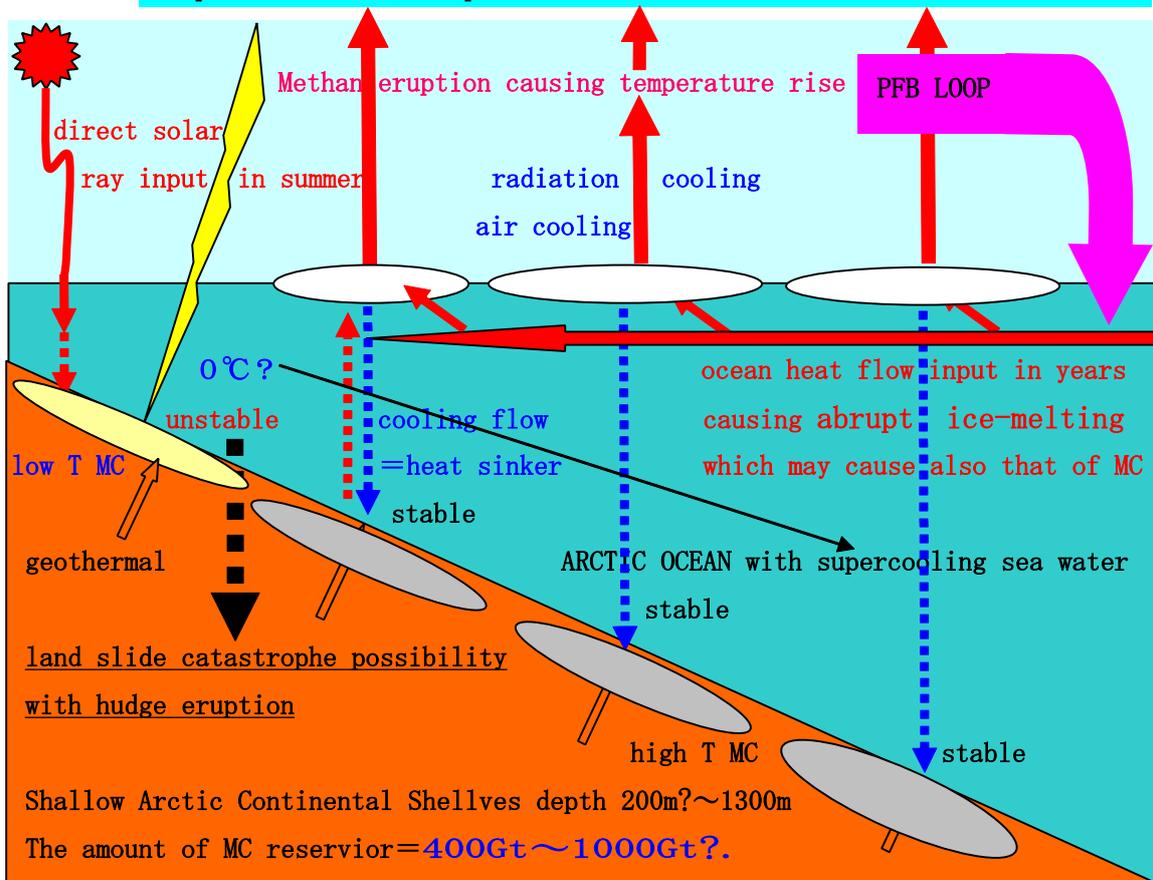
Then which do you opt **sucide** in wasteful life, or **survibe** in **20%!!** .

④Abrupt global consesus could be possible by confessing to all the people about all the emergent facts by Leaders in each nations.

☞;the fatal defect of this report is **lacking persuading ability** on the matter of ②Abrupt Methan Catastrophe the POSSIBILITY: .

It may also be emergent duty for IPCC scientists the experts ensemble.

APPENDIX: Abrupt Methan Catastrophe the POSSIBILITY:



- (1) Next event after abrupt ice-cover melting at sea surface in Arctic ocean may be that of MC in shallow continental shelves. MC is ice like unstable solid by heat. Then MC in more shallow sea floor is cooler, which accelerates heat flow. Since a heat flow from high temperature into lower one (thermodynamic 2nd law).
- (2) Then problem is heat transfer time to MC. 100m depth is zone of solar ray direct input, 200m may be in a year, and 1300m may be few years. Generally to tell, ocean is so huge heat capacity that heat up time is long as decades.
- (3) However, once MC eruption in sea floor had begun, it becomes stronger GHG to accelerate global atmospheric temperature rise by vicious feedback looping. Then if man-made GHG reduction action became late, the process could not be stopped to become catastrophic point. MC of 10Gton release could be catastrophic.
- (4) Remarkable singularity of Arctic ocean with ice may be the 0°C sea temperature. Fundamentally such coexisting of matters in different phase called critical point, where dynamic heat capacity of water is fundamentally zero. Since heat uniquely flows into ice. Consequently it may act the abrupt ice-melting in Arctic, which shall enhance direct solar ray input to the ocean.

supplement of the APPENDIX:

① **methan clathrate (MC) the thermodynamical stability:**

MC is stabilized in higher pressure and lower temperature. Therefore in shallow Arctic continental shelves, MC reservoir with lower pressure must be lower temperature, while ocean water temperature is higher as the depth is lower. Consequently temperature gradient between sea water and MC, which drive heat flow become larger. It is a point of danger of MC melting in shallow Arctic continental shelves. See **PT phase diagram of MC**.

② **unknown factor for the amount of MC reservoir in Arctic continental shelves.**

The minimum value is 400Gt, while the maximum is 1000Gt (<http://www.ecord.org/>). The location distribution is far unknown, they said. Then you should see map of Arctic ocean, which is almost shallow big pond with many rivers from continents. It's very natural to think huge amount of organic compounds synthesizing methane has been accumulated there in the long long history.

③ **Singular heat flow problem in Arctic ocean.**

(1) Surplus heat flows from high temperature of tropical zone to lowest Arctic (0°C).

The time lag is almost few years (4 years?). <2nd law of thermodynamics>.

This is ultimate macroscopic view point.

<<http://www.geocities.jp/sqkh5981g/2ndlaw.pdf>>. Certainly almost heat is paid for heating up of global ocean (especially deeper zone) heat capacity.

(2) **the most concerned problem of rapid heat transfer time in Arctic ocean.**

(a) 100m depth is zone of solar ray direct input, 200m (equivalent depth of dynamic global ocean heat capacity) may be in a year, and 1300m may be few years ?.

(b) As is known, North pole ice-cover had melted in 2008 for the first time.

Once the cover lost, direct solar ray input begins and water turbulence is accelerated, which would enhance rapid heat transfer into sea bed.

④ **As was mentioned, 0°C water in critical point has nothing dynamic heat capacity.**

Then heat transfer efficiency to ice or MC become highest.

⑤ **"Clathrate Gun Hypothesis" the obscurity of research state ?!:**

In websites, author could not find quantitative analysis report on the possibility of methane catastrophe in shallow Arctic continental shelves.

It seems very obscure that the problem is supremely serious, however the many researches apparently seem very poor. But someone knows it well ?!.

⑥ **Gone with capitalism the narcotism illusions ???!!!.**

It is certainly the final judgement !!!.