

USE OF ELECTRICITY

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October 18, 2011

By Dr. Mahathir Mohamad

1. Today the consumption of electricity is increasing at a rapid rate. We are spending a lot of money on building new power plants. We need them of course. We need the light and the power which electricity provides us. We cannot do without electricity.
2. Many people are however complaining about their electricity bill. It makes a big hole in their pockets.
3. Because of this researchers have worked hard to lower the cost of electricity without sacrificing the brightness that we have come to think is indispensable.
4. Recently I was shown new lighting systems which can save more than half our electricity bill without sacrificing our partiality towards bright lights.
5. We are already familiar with the light emitting diode or LED in our cars and televisions. Now the LED can be used for household lighting, for lighting of buildings and stadiums and for street lighting.
6. LED consumes less than half the electricity needed for the same brightness from the conventional incandescent bulbs and fluorescent tubes. Unlike fluorescent tubes LED light need noballast and the light comes on instantly upon switching on.
7. Supposing all our streets and roads are lit up with these energy saving system we would be saving millions of Ringgits. Actually it has been installed in Langkawi and Karak highway. If all the streets in Malaysia are lit this way,

and also all our houses and offices we can do away with some of our power plants. At the very least we need not build too many more.

8. That will be a plan for the nation. But for individual consumers the bill would be much smaller, maybe as low as half the present bill.

9. Besides lighting, there are now air-conditioners and refrigerators which consume less power. These too can reduce electricity bills for householders and restaurants.

10. However the cost of changing to this new system would be higher than the cost of the old system. This makes people reluctant to switch to the new system. On the other hand the savings from the reduced consumption of electricity would, in maybe three years time, cover the extra cost. Since the system can last much longer than three years the user would enjoy quite a lot of savings.

11. The power company may not feel happy at receiving less money for the sale of electricity.

12. For a time the installed capacity would not be fully utilised. But consumption would still grow and eventually the capacity would be fully utilised.

13. What this means is that the power company need not invest in new plants. This would constitute a savings for the power company.

14. The real gainers would be the suppliers of the new energy efficient system and the big users. The nation too would gain.

45 Comments

1.

Elgy Bee's Gravatar Elgy Bee

October 31, 2011 at 1:50 pm | [Permalink](#)

Dear Y. A. Bhg. Tun & All,

A, – I followed the earlier posts & tried to contact the writer under the name "Greentech" as below got an "undelivered message" response.

Dear Mr "Greentech",

I read your comment on YAB Tun Mahathir's blog & am taking up your offer for more information.

I would be extremely happy if you can give me some more detailed info and cost comparison benefits of LED street lights against the conventional system. So far I've discussed these issues with several suppliers and exhibitors of LED systems at IGEM 2010 & IGEM 2011 but no-one has yet shown me any real cost-effectiveness benefits for the user.

My knowledge on this subject says that those who have installed LED street lights are probably giving some areas good lighting from the LEDs but at a high cost which is paid for by others. Local authorities use public funds to pay for such services, as far as I'm aware.

I'm also aware of at least one case where an LED supplier has given LED equivalents of fluorescent tubes on a lease arrangement to a large industrial user which benefits both the supplier & user of this particular case.

For the record, I am an Ex-TNB (also Ex-LLN & Ex-CEB) engineer & – that should show you how old I am.

B. – I also have some strong & conflicting views on the question of solar PV for power generation when compared with those who seem to be quite “gung-ho” over PV. They don't seem to understand the cost & energy yield implications of the technology. The comments below are extracts of notes I sent to a friend who wanted credible info on PV power generation.

Extracts from previous message sent to a friend who wanted some technical info on solar PV as an energy source.

1 As a general fact, it must be remembered that all our energy is from “solar sunlight” in its widest sense; even oil & gas are a result of solar activity or sunlight allowing trees to grow. It has taken nature millions of years to convert the trees into oil & gas, while solar PV can convert sunlight to electricity immediately. Even wind energy is caused by solar heating, causing wind flows.

2 My own belief is that ultimately (maybe in a few decades' time) wind, solar PV and solar thermal will be the predominant sources of energy, including for transport in the form of hydrogen, or liquid fuels formed from biomass, not food crops.

3 Since PV costs are falling fast, it may be cheap enough in future to electrolyse water using PV generated electricity to produce hydrogen for transport fuels. Unfortunately that time is still a long way away.

4 Solar PV systems are “affordable & competitive” for isolated locations where grid power supply is costly to extend, such as on islands or remote communities such as in Sabah & Sarawak. They are also competitive for isolated but low power users such as Telco towers, marine bouys & so on where diesel sets were normally used before. The cost of diesel powered generation for such purposes is high for such use & solar PV systems, with their minimal maintenance costs become quite competitive.

5 Electricity generation from solar PV installations for grid connection to replace conventional sources from fossil fuels is too costly at present, even though costs of PV systems have dropped a lot over the last 5 years (in Malaysia from about RM 31,000 / kWp to about RM 16,000 / kWp; kWp is a measure of capacity – kW peak).

6 The cost of PV systems will continue to drop quite rapidly, but the generation cost, now about RM 1.50 / kWh is still high and not expected to compete with fossil fuel generation, which is of the order of RM 0.30 / kWh even if gas subsidies are removed, for many years to come. However, in Japan, some parts of USA, & Europe such as Germany, Denmark, etc. the retail price of electricity is high (due to carbon & other taxes, etc.) & PV generation is almost competitive. Competitiveness is measured in a term called “grid parity” which means that the PV cost equals conventional power costs.

7 The RE Act promotes RE from various sources by giving attractive FiT (Feed-in-Tariffs, as shown in the attached presentation file from MBIPV), with the highest FiT for PV.

8 In Malaysia, the cost of solar PV may achieve grid-parity (match conventional generation cost) around 2020, or even later, on the assumption that (i) all subsidies are removed, (ii) fossil fuel prices escalate, & (iii) PV prices drop at about 10% per annum. This is shown in the ETP Chapter on

Oil, Gas & Energy (Chapter 6).

9 I do not agree with the high PV FiT because it will benefit the rich at the expense of the ordinary electricity consumers. This is because the funds for the FiT "top-up" cost will come from a levy on the electricity tariff (starting with 1% from 01/09/11, now from 01/12/11). Although it is said that "anyone can install PV systems" the sad reality is that only the rich can afford to do so. Those who have difficulty making ends meet cannot afford the capital or down payment to get bank loans for the pV installations. They may not even have the ability to get bank loans in the first place.

10 deleted

11 The FiT rates in Germany, the most successful country in promoting PV, more to develop its technology & manufacturing capacity & job creation, has been reducing its FiT rates faster than they originally planned because the FiT recipients were making "windfall" profits at the expense of other electricity consumers. Also, the current FiT rates for PV in Germany are only about 70% of those proposed for Malaysia.

12 Malaysia is benefitting from the solar PV manufacturers who have set up their plants locally. They were given very attractive promotion incentives & are making good profits from their 100% exports of their production. Even the proposed Solar PPs proposed will not use more than about 1% or 2% of their total production (expected to be over 2,000 MWp a year by 2012).

13 I see no reason to give them, or other foreign equity holders, the opportunity to make more profits from Malaysian electricity consumers through the tariff levys, as foreign holders can hold up to 49% equity, & the related profits for 21 years, to be expatriated out of the country.

C. – I am prepared to discuss the respective issues in more detail if necessary.

YAB Tun, I apologise if this post is like “throwing some spanners in the works”, esp with reference to your comments on LEDs & solar PV.

Elgy Bee

2.

Hajar's Gravatar Hajar

October 30, 2011 at 1:32 pm | [Permalink](#)

Salam YAB & diKasihi Tun,

Saya amat setuju dengan saranan Tun, tapi mungkin ramai yang masih tidak mahu menukar jenis lampu yang digunakan kerana ianya membabitkan KOS PERMULAAN yang agak banyak, terutama untuk premis perniagaan dan kawasan yang besar.

Untuk mengganti segala lampu yang di bawah tanggungjawab Kerajaan, takut nanti kosnya menjadi berkali ganda lebih tinggi sebab ada yang akan mengambil kesempatan di atas projek Kerajaan membabitkan penggantian lampu.

Lagi satu, harga lampu LED lebih tinggi dari lampu yang biasa digunakan walaupun jangkahayatnya secara purata lebih panjang (ini dari pengamatan saya).

Tetapi, pada pandangan saya, jika pengguna tahu untuk BERJIMAT

dalam penggunaan elektrik, masalah bil elektrik yang tinggi akan dapat diatasi dengan mudah.

Terima kasih Tun.

*** Semoga Allah SWT melindungi Tun sekeluarga. ***

3.

zuls79's Gravatar zuls79

October 28, 2011 at 3:45 pm | [Permalink](#)

We should not build garden like I-City in Shah Alam.. Consume too much energy..

4.

Fly-Half's Gravatar Fly-Half

October 28, 2011 at 12:21 am | [Permalink](#)

Assalamualaikum Yang Berbahgia Tun,

Thank you very much for bringing up this issue. I really appreciate your concern with regards to this subject matter.

1. First of all, let me take us back to the time when IPPs were primarily introduced to this country, which was done against a backdrop of experiencing a massive blackout in 1992. Consequently immediately after the incident, the government then decided to embark upon developing the IPP business. TNB as the sole power generation company at that time simply was not able to cope with the demand. During that particular period, the country was being transformed from an agriculture base economy to an industrial and manufacturing concept. Nevertheless, when it comes to power

generation, main concern is the fuel supply. All of the 1st generation IPPs that were built were gas fired due to the fact that we have ample supply of gas reserve in the east coast and gas fired power plant takes shorter time to be built compared to coal fired. When it comes to power project development via project finance exercise, financiers @ lenders do have a set of guidelines to be complied with. In this case the main concern is gas pricing itself. Therefore it was decided back then the gas price were fixed at RM6.40 per mmbtu. Not many realised that single number actually save the country.

2. Our economy basically concentrates significantly on industrial and manufacturing sector that is energy intensive. Problem is, now we don't have abundance of gas reserves within our shores. Therefore gas supply has to be sourced within deep waters and that affect the gas production cost, not to mention global market forces pushes the price further up. Currently TNB is paying in the region of RM10.70 per mmbtu, whereas actual market price is nearly RM40. Petronas ie; the government cannot be subsidizing the gas price forever. Furthermore, we are burning around 20M tonnes of coal annually and at present moment coal price is traded in excess of USD 100 per ton. Want to know how much electricity generation comes from gas plants (single cycle / combined cycle)? It's about 50% of fuel mix. The rest are coal fired which comes to around 40%. Balance 10% comes from hydros and so called RE (which is minimal).

3. Pursuant to the above, the methodology of power demand and supply intertwined with the operation of base load and peak load plants. I believed engineers working in the power sector fully understood what that means. Most of all in our case, power consumption is directly related to economic progression, which in the end is translated into GDP growth. Currently the government forecasted GDP growth of 5% annually onwards. This single number consequently theoretically determines how much electricity has to be generated for the nation's consumption. My question is, what's the demand going to be like in 2,3,4,5..... years ahead? Anybody thought about that?

4. Of course at present the government is promoting RE for electricity generation. Question is, in reality how much does the tariff cost per kwhr? It's nearly twice the cost of levelised tariff. Who's going to bear the cost? Another issue which most fail to understand is that RE plants can never be

operated as base load. The issue here is related maximum demand @ peak demand, and currently our maximum demand is slightly over 15,000MW. Whereas our installed capacity is in the region of 20,000MW. Taking into consideration plant efficiency, availability & load factor, losses, planned / unplanned outages, what's the reserve margin then? Roughly one third of the thermal plants are old @ derated, Paka, Pasir Gudang, Connaught Bridge and Putrajaya which belongs to TNB. When it comes to the IPPs, YTL (Paka & Pasir Gudang), Segari, Genting Sanyen, Powertek and PD Power will soon come to the end of their useful economic life.

5. Promoting the usage of LED or other ideas on energy saving schemes is a virtuous idea. Question is, this matter is directly related to policymaking and implementation wise. Towards the end, all comes down to dollar & cents. How many (the general public) are able to afford the cost or willing to make such changes? Looking into TNB's 2010 annual report, generally the big guzzlers are for industrial and commercial consumption that comes to nearly 70% of power supply in this country. Whereby household usage only constitutes about 20% of energy consumption.

6. Recently TNB made announcement that this year (2011) their financial results may be affected badly due the fuel costs factor. Definitely in the future TNB can keep asking the government for higher tariff to cater for the shortfall, but still that does not solve the problem because gas and coal prices will keep going up as well. In the end, the costs will still be pushed to the public. If this is the trend of things to come, it will surely have an affect on the political outcome in the long run.

7. Finally, what I wish to know from the government, what are the mid-term to long-term solution with regards to power demand and supply plan. If we do not come out with a comprehensive plan now, its not impossible that within the not so far future, what happened in 1992 will happen again. What are we going to do then? What do you think will happen to the economy if the unthinkable happens?

Thank you very much for publishing my thoughts.

Wassallam Tun and take good care of your health, my best wishes to Tun Hasmah as well.

5.

yusha's Gravatar yusha

October 28, 2011 at 12:01 am | Permalink

Dear Tun,

First of all, i wish to thank you for all that you have done to our country and to us the Malays who had taken up the opportunity that you have given us.

Tun, all the talks about electricity is well and good. it is something that is commendable. but let me direct to you to the real problem that Malaysia is facing and then we could discuss what is your opinion. Tun, thanks to DEB, i have obtained my Master In Lighting both from the US and Australia, and if Allah willing, i would pursue the PHD in the same field.

in my humble opinion, Malaysian is by far not in need of any energy saving device because simply Malaysian does not understand the term EFFICIENT in the first place. Our requirement and standard is far from complete thus it results that the energy that Malaysian uses is by far wasted to oblivion. I once have made an energy audit in a building in Australia that had received the 5 star energy rating and to my surprise the only LED that i found was in the button of their LIFT. Its the building for wildlife and it is located on the 8th, George Street. I ask them how did they manage to do such a feat. the answer was so simple, they know how much they required at their place and specific location. to talk in the lighting term, 200 lux on their work space and 80 lux in the hallway – i could do much explanation, but people would think that i'm against the technology advancement and do not want to see my country at par with the developed nation.

Tun, both of us have the nation as priority, but in a nut shell what i am saying is the Malaysian people need to learn to handle their electricity efficiently first. once it is efficient, then saving would come automatically. I am not talking bad, but we need to learn more and study more so that we could develop accordingly, with our own pace. You have driven the nation to be an industrialize nation, but the work was half done, the guy after you

have driven the country back ward while trying to leave his mark making the industry player hanging dry and high and now the guy after him is jumping the band wagon altogether resulting in more traders rather than manufacturer.

Do tell me the truth dear Tun, since you are the person that i highly look up to, do you think Malaysian are in safe hand and are we ready to face the world? in this highly competitive world of ours?

p/s : I would really appreciate if i could learn from you personally

6.

Samvinche's Gravatar Samvinche

October 26, 2011 at 7:38 pm | [Permalink](#)

we must use a renewable sources of energy – wind,water,sun !!!!!

freelance online writing jobs

7.

Peiseh's Gravatar Peiseh

October 26, 2011 at 4:35 pm | [Permalink](#)

Dear Tun,

The proposal to switch over to better energy saving technology is a sound one.

However, it is easier said than done. Like the many comments here, LEDs and new household electrical systems cost monies to buy and change. Life is already pretty much from hands to mouth, and to change to such technology would take much effort and a change of lifestyle for some.

If the government is "pri-hatin" about the rakyat and wanting to

sincerely help them, then it should come out with a tax exempted scheme as an incentive to encourage the rakyat to change their aged electrical appliances and lighting system.

We all know that there's little the government can do to revise down the power tariff, so the only way to ease the burden of the working rakyat is to help them in the only way the government can do, reduce the taxes on these essential items.

The government will not loose out on tax collections. The billions raked in luxury cars imports will surely compensate the little gap caused by the formal actions.

Tun, when one is not bothered about the rise of electricity bills and cost of livings themselves, they will never know or feel that there is a need to do something about it. I am directing this to the many senior servants and MPs out there. With almost everything comfortably provided for by the working rakyat, they will not feel the pinch at all or the need to help ease the burden of the rakyat in general.

Tun, I have not seen many MPs standing out and asking the rakyat to find ways to sustain their lifestyle or ways to make the living a bit easier. None, that I can re-call of late.

Does this mean they are already out of touch with the real issues of the rakyat, and too engrossed and obsessed with getting on the good side of the government, or rather team?

Tun, the rakyat don't care about what DSAI have done or not. Its not about him. Its about us, the rakyat. Its about us that matters now.

It matters to us when our taxes paid are squandered mindlessly away by politicians and corrupted government servants. It matters to us when our

level of education continues to drop behind in the international arena. It matters to us when FDIs continue to fall and yet the government chooses to window-dress it with fictional figures. It also matters to us when social ills continue to thrive with loosely guarded borders and immigration policies. And to top this off, our Home Minister continues to ridicule the rakyat's concerns with stupendous answers.

Tun, we are in need of help. Is there anything at all can be done to ease the rakyat's burden?

Salam Bahagia Tun.

8.

NASH's Gravatar NASH

October 25, 2011 at 10:57 am | [Permalink](#)

Tun,

Enak becakap tentang kejitatan bil elektrik. Tetapi kerana apa BN sewenang wenangnya naikkan tarif elektrik sedangkan TNB telah membuat keuntungan Billion Ringgit. Suri rumah belanja bill elektrik yang tertinggi sekarang. Keadaan sekarang Rakyat Malaysia ramai tinggal dalam kegelapan sebab hendak jimatkan bil elektrik. Tidak indah seperti dahulu lagi. Jika PKR kampen hendak turunkan tarif elektrik sudah pasti BN akan tewas.

9.

FEEDINTARIFF's Gravatar FEEDINTARIFF

October 25, 2011 at 9:12 am | [Permalink](#)

Dear Tun yg saya hormati

kalau tak salah saya this december akan dilancarkan "Feed In Tariff" dimana projek ini memperkenalkan satu skim kepada individu dan syarikat yg berminat untuk menghasilkan tenaga elektrik dari solar panel kemudian tenaga itu akan dijual kembali kepada TNB. Dgn kata lain jika seorang individu berminat memasang solar penal di atas rumah mereka dan penghasilan tenaga solar penal itu akan terus dibeli oelh tnb. So individu tersebut akan mendapat imbuhan dari tnb setiap bulan. Minta Tun komen sikit> tq

10.

MiddleAges's Gravatar MiddleAges

October 24, 2011 at 5:48 pm | Permalink

Salam Tun,

CH Liew says.

"Tuntuah comment is logical as there should not be poor people is Malaysia. Who are the poor people? There can only be lazy people."

1. Actually, from my own experience, there are two types of lazy people, the poor and the rich. The middle or working class cannot logically be lazy, they won't get paid ! And middle class are afraid to be poor.

2. The lazy poor is their own journey in life, when hungry they will soon learn to not be lazy. These are not actually poor, they should be categorized as "learner" or "L" class, waiting to learn a lesson.

3. The lazy rich, i don't want to write about here, as there are many of them reading Tun's blog. I may be cruxified, again and again and again.

Even Jesus was crucified only once. They have the money they can throw, and poor penniless me, can't even afford a lame layer. So I pass.

4. "If poor people work harder (longer hours or 2 jobs) there should be enough for all and the country. "

If poor people can find a way to postpone sleep to the weekend, they can get three jobs. Maybe medical science can find a new pill to do just that. Call it "ImaWake" or something.

Thank You Tun

11.

MiddleAges's Gravatar MiddleAges

October 24, 2011 at 5:32 pm | [Permalink](#)

Salam Tun,

Allow me.

amin tan says

"Some opposition detractors would always criticise as benefiting the cronies, the rich getting richer and so on. Let them bark at the mountain. If we listen too much to the opposition with vested political interests, nothing gets done."

1. it is "wajib" to listen to opposition. listen first, for it may contain words of wisdom. and then do lah whatever you want, ikut suka hati.

2. this LED thing is among the kind of project that can be distributed, many, several thousand companies maybe, can participate. plenty of people will be happy.

3. the unhappy people are the ones who want this "centralized" and purchased through one or a few companies, all cronies.

4. but this time susah sikit. LED is so abundant today, and manufacturers will be making lots more in future as we will perhaps provide them the rare earth they need.

5. for this topic, neither Tun nor me nor anyone else here talks of crony suppliers. no one was even thinking about it.

Thank You Tun

12.

cherry's Gravatar cherry

October 24, 2011 at 3:52 pm | [Permalink](#)

Salam Tun M dan semua,

To androman,

You mau semua free? electricity free? Di China or India ada electricity free? You must migrate man...don't waste your time no more.

13.

sabar din's Gravatar sabar din

October 22, 2011 at 12:31 pm | Permalink

Assalamualaikum Tun yg di hormati..

1. Memang benar apa yang diperkatakan oleh Tun tentang penggunaan LED ini.

2. Baru-baru ini saya dan kumpulan saya telah mempersembahkan teknologi ini dalam Konvensyen KIK peringkat Jabatan untuk penjimatan penggunaan tenaga elektrik dipejabat.

3. Nampaknya mereka tidak dapat menerima lagi penggunaan ini disebabkan kos yang mahal sedikit berbanding sistem yang sedia ada. Tetapi kos ini akan murah pada masa akan datang apabila ada permintaan dan saingan dipasaran.

4. Mentol LED hanya menggunakan hanya 6 watt sahaja dan kecerahannya sama dengan mentol CFL 60 watt, bayangkan kita telah mengurangkan penggunaan tenaga elektrik sebanyak 90%.

5. Berbanding dengan mentol yang sedia ada, mentol LED juga tidak panas dan dapat mengekalkan tahap suhu.

6. Jangka hayat mentol LED ini juga tahan lama, sehingga 50000 jam.

14.

omarkhalid's Gravatar omarkhalid

October 22, 2011 at 11:56 am | Permalink

Salam Tun,

hope you are well. you are correct with your statement but then how do we get out of the IPP contract where TNB is hit irrespective of the issue.

15.

readman's Gravatar readman

October 22, 2011 at 3:20 am | Permalink

Salam Tun,

Govt invest in BIGGEST LED FACTORY in Sarawak, that'll provide lots of jobs. Sarawak must be turn into High-Tech Industrial Manufacturing Location.

HYDROELECTRIC DAMS to PROTECT the PADDY FIELDS !

FLOOD DESTRUCTION, COST MORE than its Victims's yearly electric bill !

worry about ELECTRIC BILL? WORRY about FOOD PRODUCTION !

MORE ELECTRICITY TO OUT-COMPETE CHINA or Chinese Goods will MONOPOLIZE Malaysian Market, and jeopardize the very existence of this Nation-State.

16.

far_east's Gravatar far_east

October 22, 2011 at 12:52 am | Permalink

I am all in agreement of the energy saving initiatives. It's the easiest way to reduce our electricity bill, avoid new construction of power plants, reduce environmental pollution (for electricity generated from fossil-fuel fired power plants), and many more benefits. Why this method is not being given more emphasise is beyond me. Even Electric Power Research Institute (EPRI) of US suggest to promote more energy efficiency as an important component towards ensuring energy sufficiency beyond 2050. Malaysia should also pursue more renewable energy. Once all options are exhausted, than only other alternative should be considered. We have to set our priorities straight and be clear of our what we want to achieve. There's no 2-way about it.

While on the issue on energy, I would like to ask everybody who is reading this blog to please participate in this survey about the risk perception of nuclear power in Malaysia. This is to identify the perception of Malaysian on this matter. It will take about 3-5 mins only. The link is as below (pls copy and paste in the address bar):

http://www.kwiksurveys.com/?s=NMKNHL_5528e107

As concluding remarks, Malaysia do need more power in her anticipation to become a developed nation by 2020. But the solution is not only by building more power plants. If each and everyone of us could contribute by using less electricity, our future will look brighter. The power is in our own hands.

17.

fadzireen's Gravatar fadzireen

October 21, 2011 at 4:17 pm | Permalink

Salam TUN,

Electricity is a necessity not a luxury.

Rising cost is inevitable, due to depleting raw materials sources.

If we are unable to control external market forces, we can optimise the internal.

Reinventing the work place by cutting corners.

When productivity increases, the cost goes down.

Hope the service provider can embark on this journey instead of demonising nature.

Entry costs implementing new technology is always high, but it can be done progressively.

18.

Oumono Man's Gravatar Oumono Man

October 21, 2011 at 12:04 am | [Permalink](#)

Mini hydro plants suggested by Pizzo is a very good idea but there are a lot of restrictions for a hydro plant. The first problem, you need water and it is not available everywhere. There are few alternatives though. We can't be building big power plants like we are doing right now. If everyone studied this power plant, they actually wasted a lot of energy. 70% energy release into the air just like that and these big power plants consume water for cooling as well. There is an engineer who created a system (I studied this person a while ago but forgotten his name), this person responsible for designing the Thames river flood gate. He invented a power system in a small town in England called Woking. They reduced massive amount of fuel and they utilised every ounce of fuel used to produce electricity. They save more than 50% of what other British citizens paying. It is a great system and if we are serious about going green, this is a very good example we should follow.

19.

androman's Gravatar androman

October 20, 2011 at 8:14 pm | [Permalink](#)

Tun,

Your so clever so analytical so great but maybe you forgot to mention to your supporters that with the "take or pay" contract, TNB still has to pay the IPP suppliers regardless of whether they actually use the electricity

20.

zainaltech's Gravatar zainaltech

October 20, 2011 at 4:28 pm | [Permalink](#)

salam tun...

May Allah bless you in your present life and hereafter

just to share my humble opinion...

besides building the dam to generate electricity for household and maybe for our industries, we also should consider the another alternative of creating the energy resources which is more environmental friendly, cheaper, more natural and the most important will not exhausted... Eg: solar energy.

I think more funds should be spent by government on research area to create and use this type of technology.

Computer Tips and Tricks

21.

greentech's Gravatar greentech

October 20, 2011 at 3:46 pm | [Permalink](#)

Dear Tun, you are absolutely right, LED saves electricity, and we should look more seriously into adopting the LED technology in our daily lives, for better energy efficiency.

The cost of LED street light for example is around RM 900 per unit for a 30 watts module, come with high quality CREE LED, 50,000 hours life span, and save electricity up to 70%. If any one wish for more details please mail me....microngt@yahoo.com

22.

mgpunya's Gravatar mgpunya

October 20, 2011 at 12:27 pm | [Permalink](#)

YABhg Tun,

We need to be honest....

Check our electricity bill.....

Do our part....

And, walk the talk....

23.

CH Liew's Gravatar CH Liew

October 20, 2011 at 9:38 am | [Permalink](#)

Tun,

Tuntuah comment is logical as there should not be poor people in Malaysia. Who are the poor people? There can only be lazy people. Malaysia is always short of workers so how can there be poor people. If poor people work harder (longer hours or 2 jobs) there should be enough for all and the country. Too many depends on hand-out and free things and how to sustain the country.

The hard working middle class tax payers are the abused people and the rich are don't mind paying as they earn more than enough. We should only help the incapable or sick poor people who genuinely cannot work. Foreign workers in estate, F&B, cleaning service and many other industries are enjoying life in Malaysia and they don't complain of being poor or wait for hand-out, they work double hard to survive and take money home to their families. Those foreign workers should pay a small income tax too.

24.

kenapa's Gravatar kenapa

October 19, 2011 at 10:31 pm | Permalink

Assalamualikum Tun

Bila berbicara tentang penjimatan tenaga, samaada letrik atau bahan api, saya ingin menyentuh isu kenderaan-kenderaan yang bercermin gelap atau 'tinted'.

Saya berpendapat masa sudah berubah. Ancaman komunis sudah tiada (melainkan isu baru-baru ini!). Rasanya pihak kerajaan, terutamanya Kementerian Pengangkutan & JPJ membuat perubahan undang-undang untuk melonggarkan penggunaan 'tinted glass' untuk kenderaan.

Ini kerana banyak kenderaan telah dipasangi dengan 'tinted glass' yang boleh membantu menjimatkan tenaga semasa menggunakan penyaman udara kenderaan.

Tidakkah ini akan membantu semua pihak termasuk Kerajaan didalam mengurangkan penggunaan bahan api, terutamanya petrol, disel & gas dan saterusnya mengurangkan subsidi kerajaan untuk bahan-bahan tersebut.

Saya berharap Tun boleh menyuarakan perkara ini untuk kebaikan semua dan diharap Kerajaan dapat mengkaji semula polisi penggunaan cermin gelap untuk kebaikan semua pihak.

25.

Leenayul's Gravatar Leenayul

October 19, 2011 at 9:23 pm | [Permalink](#)

Assalmualaikum WRB Tun Mahathir,

Thank you for your comments on the usage of electricity and the need for us to preserve and save this resources. I would like to bring to TUN's attention another technology that is proven and is less expensive to implement called Induction Lights. Induction Lights are electrode-less lights that do not have filamen and gives it a longer lifespan up to 80,000 hours. Its light degrading factor is also very minimum where it is able to produce 80% brightness after 20,000 hours. (4.5 years for street light). We have installed induction street lights in Kuantan,Rompin,Shah Alam,Merlimau and Johor over the past 2 years with proven energy savings of 50% consistent savings from TNB bill. Recently we have successfully registered with JKR as a energy saving light for Street Lighting. The cost of Induction is also much lower than LED and inductions are not pushed by the major players due to its long life. (no repeat business). For TNB and Municipal councils this alternative best suits their needs and budget as the maintenance cost of replacing lamps is virtually zero for 10-13 years. We also provide warranty

for 8 years on all products supplied to the government. If Tun is free, our group would like to make an appointment to meet and provide all the facts and figures. Few of the overseas countries are already opting to use Induction vs LED at the present moment. Thank you and we hope to provide additional Information on the various technology's available out there.

Sekian, terima kasih dan Wassalam

Induction Lights has been around for a long time and has a proven lifespan

26.

mubarakchan's Gravatar mubarakchan

October 19, 2011 at 6:00 pm | Permalink

Amintan

I support your wise proposal that Tun Dr Mahathir Mohamad should stand in Putrajaya and be elected to the Dewan Rakyat. He is one of the few persons who know how to govern our beautiful country, Malaysia without being seduced by the power and the money, taking full cognizance of our sovereignty, national interest and self-esteem. At least, Tun did not lose US\$ 108 Billions of money held in trust for its citizens in a short span of time or allowed outsiders to bite at the ripe cherries planted by our patriots years ago ! He always had our nation and its citizens at heart.

Coming to the consumption of electricity, there has always been a high rate of pilferage through organised gangs all this while. It is alleged one Kuala Lumpur household used 4 air-conditioners continuously for 24 hours daily and paid not more than RM 250 per month ! This phantom network must be running in parallel with the established one. There must be thousands of homes and factories which indulge in this anti-social activity. Is this fair to the law-abiding citizen who paid his/her dues promptly ?

All unofficial leakages of power should be stopped before our country undertake to embark on schemes to attain a higher level of electricity supply which is becoming more and more expensive.

27.

egalitarian's Gravatar egalitarian

October 19, 2011 at 5:02 pm | [Permalink](#)

Assalamualaikum Tun, semoga sihat selalu, insya'allah.

Sources inside TNB are talking about breaking-up TNB's subsidiaries and selling it to the same IPP parties that are arm-twisting them. Have we ever learned anything yet? Maybe no, need a pay hike to realize....ask Khazanah boss he'll agree.

Tun, if only they listen to you on Bakun on full-scale. Should stop all fossil fuelled plants in future and work towards the full completion of Bakun's infrastructure incl. marine power cables connecting Peninsular. Otherwise TNB will always turn to Govt for all their short-comings.

FYG, most industries now replacing/installing Gas fired GenSets which shall be a huge loss to TNB on a long-run. It's easier to buy gas from Petronas than utilize TNB's gold priced power and be again envious of Petronas on their huge gains.

28.

G7's Gravatar G7

October 19, 2011 at 12:18 pm | [Permalink](#)

Salam ayahanda Tun dan rakan.

Isu Elektrik di Malaysia menjadi pelik terutamanya berkenaan dengan tarif. anak tun razak mahukan negara ini menuju ke arah negara yang menggunakan teknologi hijau. antara teknologi hijau ialah kereta elektrik/hybrid. penggunaan kereta berkenaan memerlukan cas yang bersumberkan elektrik. TNB sebagai syarikat berkaitan kerajaan setiap kali mencari cara menaikkan tarif. kita akan dibebankan dengan tarif yang akhir sekali penggunaan kereta elektrik tidaklah semurah yang disangkakan kerana bil kita melambung.

benar kos minyak akan dikurangkan tapi lupakah kita yang TNB dan kerajaan bercadang untuk mengenakan denda kepada mereka yang menggunakan terlalu banyak elektrik. adakah pendekatan TNB tidak selari dengan hasrat kerajaan. atau adakah lebih tepat tindakan TNB sebagai khianat kepada kerajaan yang memerintah. atau anak tun razak hanya menjadi burung kakaktua yang hanya pandai bercakap tapi pelaksanaan termasuklah tindakan anak syarikat berkaitan kerajaan tidak senada sekata.

mengenai pemasangan lampu berkuasa LED, kerajaan boleh melaksanakan sedemikian secara berperingkat. dalam hal ini, isi rumah telah mendahului kerajaan dalam pemasangan lampu led jimat tenaga.

kerajaan boleh mengeluarkan bq yang membolehkan pemasangan lampu led d bangunan baru kerajaan selain mengganti yang baru secara berperingkat. tapi kerajaan sekali lagi lalai. sekiranya dilihat dalam bq bangunan kerajaan pada tahun ini pun masih tidak menggunakan lampu led pada bangunan kerajaan. ini adalah sesuatu yang kadang kadang kita tersilap pandang.

solar adalah satu lagi perkara yang baik untuk kerajaan dalam berjimat cermat. tidak akan berlaku kekurangan pembekalan tenaga kerana kita semua akan menggunakan tenaga elektrik yang semakin banyak. cuma akan menjadi isunya ialah kepada bahan jimat tenaga. dulu kita memasak

air menggunakan dapur tapi sekarang menggunakan cerek elektrik. itu salah satu contoh penggunaan yang bertukar kepada elektrik.

kerajaan jangan jadi ketam mengajar anaknya berjalan lurus sedangkan mereka tidak berbuat sedemikian. lebih lebih lagi apabila kerajaan nampak sangat ketinggalan apabila menteri hanya bercakap mengenai mentol jimat tenaga hanya pada tahun ini sedangkan kehadiran mentol ini telah bertahun lamanya. adakah menteri ini tertidur.

terima kasih Tun kerana membuka satu topik yang sangat menarik yang saya kira hanya Tun sebagai PM mampu melakukannya dan saya tidak menaruh harapan yang tinggi untuk PM selepas tun melakukannya. Cuma masalahnya perkara ini hanya hadir setelah Tun meletakkan jawatan.

29.

pizzo's Gravatar pizzo

October 18, 2011 at 8:20 pm | [Permalink](#)

-

Here's what I thought, a theory:

If each housing area have a sizable mini-hydro powerplant that's enough to power just that housing area, we can actually solve the power crisis.

We can also divide the grid and devise a customized hydro powerplants enough to cater for the needs of a specific area within a certain kilometer radius.

2. This way, we can also decrease the dependency on major power

plants, and solve problems like electricity outages at a minimum.

3. Due to reason #2, if there's a power outage, it will only be restricted to just a single area. The rest will have their powers on.

In terms of national security defense, should we be at war, the nation can still function if the major power plant is taken out.

4. To make it more efficient, we can link the power plants together so if say, Area A experience a power outage, the other powerplants can divert a portion of their power in a collective to support that area.

30.

andrewtay85's Gravatar andrewtay85

October 18, 2011 at 7:52 pm | [Permalink](#)

This is something that the government has to play a role in. It could be by giving concessions to energy saving products or tax more on the sale of conventional electrical appliances which does not efficiently use energy to power it.

Also you forgot to mention solar power. Malaysia could potentially benefit from solar power too.

Building designs also could be manipulated to take advantage of the surroundings. More glass windows to let the natural light into the building and also reflective coatings on the walls of the building to reflect as oppose to absorbing heat. Maybe land tax concession or building permit concession.

The government has to get the ball rolling and later on, the private sector will join in the bandwagon.

But what is the use of all concessions being available if the people's mindset has not changed. People are still willing to pay 20 cents for a plastic bag rather than bringing their own shopping bag to the markets. Understandably some of them use plastic bags as trash bags which kinda even things out.

It comes down to proper policy planning and also the implementation of the available policies which is lacking on the part of the government.

31.

aziziike's Gravatar aziziike

October 18, 2011 at 7:38 pm | [Permalink](#)

well said

32.

Ibnu Sulaiman's Gravatar Ibnu Sulaiman

October 18, 2011 at 4:46 pm | [Permalink](#)

Assalammua'laikum wrt... Tun yang dihormati,

"Kita" merujuk kepada diri penulis, berbahagia Tun dan pembaca mesej ini.

1. Syukur kehadiran Allah SWT kerana masih memberi kita rezeki yang melimpah ruah, keamanan, kemakmuran, dan yang paling utama memberi kita nikmat Islam. Janganlah sampai kita lupa bahawa kenikmatan tersebut

hanyalah sementara di alam dunia ini dan Allah boleh menariknya pada bila-bila masa. Mungkin selepas dari membaca mesej ini, Allah mencabut nikmat nyawa kita kerana yang hidup pasti mati. Selagi nyawa dikandung badan, selagi itu tanggungjawab yang di amanahkan oleh Allah SWT wajib dilaksanakan dan diamalkan.

2. Semoga Allah SWT terus mengurniakan Tun kesihatan mental dan fizikal, dipanjangkan umur, diberi taufik hidayah dan dirahmati Allah SWT selalu. Amin.

3. Apa yang menarik tentang elektrik ialah suatu benda yang wujud adanya tetapi tidak boleh dilihat dengan mata. Tetapi, ia boleh dikesan dengan bantuan alatan elektrik. Sebaliknya, keimanan kita kepada Allah SWT, malaikat², hari pembalasan, syurga, neraka adalah perkara² ghaib yang wajib untuk dipercayai kewujudannya dan tidak dapat dilihat dengan mata. Selagi manusia itu masih bernyawa dan selagi itu kita tidak dapat melihat perkara² ghaib tersebut, kecuali sudah MATI.

4. Sebagai tanda kita beriman kepada Allah SWT, kita akan melakukan syariatNya yang telah ditetapkan dalam Al-Quran dan Sunnah RasulNya. Terutama sekali, mengerjakan solat fardu 5 waktu berjemaah di masjid kerana Allah SWT.

rgds

Ibnu Sulaiman

Komen² Terdahulu:-

01. Jom Solat Fardu 5 Waktu Berjemaah

02. Ciri-ciri Asas Pemimpin

03. Yang Hidup Pasti Mati

04. Islam Menolak Fahaman Asabiah, Perkauman dan Kebangsaan
 05. Bala Bencana!!! Apabila Hubungan Kita Dengan Allah SWT Tidak Dijaga
 06. Adakah anda orangnya yang sanggup menghina Allah SWT dan Rasul-Nya?
 07. Kata-kata Allah SWT dan Rasul-Nya paling tinggi makamnya
 08. Apa Erti Sebuah keMERDEKAan?
 09. Usahlah dibanggakan dgn Harta, Anak Pinak & Pangkat Kuasa
 10. Kesan Buruk Sistem Kapitalis
 11. Iklan Kekosongan Jawatan
- 33.

Saif Qamar's Gravatar Saif Qamar

October 18, 2011 at 4:38 pm | Permalink

Assalmualaikum WRB Tun Mahathir,

Firstly I would like to say that you have a very nice site here and I find it quite informative. I hope I can get acquainted with you. Yes I agree that the amount of electricity being used (or rather abused) is extremely alarming. I'm glad at least, that there still are people in this world taking measures to reduce its consumption.

By the way Tun, are you aware of the Institute of Advanced Islamic Studies Malaysia(IAIS Malaysia)? My father works there as an IT Admin. but I myself have been given the chance to speak to very intelligent professors researching about modern day Islamic affairs and such. The CEO himself is a renowned researcher, Professor Hashim Kamali.

The reason I ask is because this institute is frequented by many

leading and influential people to attend forums, seminars, talks and such. However, I have yet to see you make an appearance.

34.

All Black's Gravatar All Black

October 18, 2011 at 3:42 pm | [Permalink](#)

Salam Tun,

This 'green' topic really left less comments compare to your political view. Just to share, LED use up to 75% less energy and last up to 10 times longer than standard light bulbs. LEDs can be used to build energy-efficient lighting products that save energy, help protect the environment, reduce maintenance costs and make people and things look much more attractive than traditional lighting. And they can last much longer than traditional lighting.

A main challenge with LED lighting is that it costs more upfront, but really, it's no different than requiring insulation in homes and buildings. It can pay for itself over time with energy savings and lower maintenance costs. Keep this in mind when you initially invest in LED lights.

"Bad lighting habits can't be broken if no one understands the alternatives." tq

35.

HBT456's Gravatar HBT456

October 18, 2011 at 2:48 pm | [Permalink](#)

Good afternoon YAB Tun,

1. We, as consumers, should look at objective of the new system for at least 1 decade since the value is very much smaller, and it is affordable.

2. As for government and its ministries, GLCs and private sector, they should look at the new system for at least two decades from now.

Remarks: One decade = 10 years.

Good day, Tun.

36.

Tuntuah's Gravatar Tuntuah

October 18, 2011 at 1:55 pm | [Permalink](#)

Electricity oh electricity.

1. I got nothing from the budget.

2. now i need to pay extra 6% for cukai perkhidmatan and additional 1% for the electricities if i consume more. Wat la...

3. The think tank of the government these days are really stupid.

4. Are these Idris Jala ideas or another stupid guy in the government?

5. Is it the time we need to change the government?

6. Arrrgh. the other camp stupid as well.

7. Just a little advise. Kick out Idris jala from the government or we will become like MAS.. going for bankrupt.

8. It is wise to employ KJ, which i know you hate him, but he got brain.

37.

Tuntuah's Gravatar Tuntuah

October 18, 2011 at 1:25 pm | [Permalink](#)

1. Enough with this electricity. we got bakun dam.

or are we lobbying nuke power plant here? well, u got brain to think.

out of topic.

Belanjawan 2011.

1. Belanjawan 2011 is not good for me at all. i'll end up giving more money to the government and my kuasa beli become lesser.

2. in other word, we are going for inflation and our economy is going down.

3. Am i right? i am not the economist but for sure for me and the

family it is right.

4. The government is too focusing on the poorer and forgot for those who are laying the golden egg – the tax payer.

5. if the government do not care about these geese that laying these golden eggs, the geese will die and no more golden egg can be collected. so please take care of us or you just go bankrupt.

6. Example : Greece: giving too much comfort to poorer make these poorer people become lazier and more people like to become poor because the benefits are more. This resulted the number of tax payers have been reduced and the government has no more money to be collected.

7. I am not against the poor but in ISLAM, if your declare your self daif and selalu meminta minta, kamu akan dipandang hina. if you like to become one, go ahead. you make that call.

8. So what now? Idris jala, any slide to share?

38.

cakkuncak's Gravatar cakkuncak

October 18, 2011 at 1:18 pm | [Permalink](#)

Dear Tun,

The LED technology has been in the market for quite some time now though we may define that period as recent and its benefits are well known thus the adoption of the technology as you mentioned.

However, to implement it on a larger scale I believe the authorities or government agencies responsible for this is aware, but as it seems to be the norm in Malaysia, until such time any ideas are seen or heard by the PM or ex PM, most will not see the light of day where the real benefit of the ideas/technology can be seen in reality.

Still, many do attempt and it is with joy and relief that somehow it reaches your attention and you mention it here.

Having said that, there is a more recent light emitting technology that is local which is membrane based, with the benefit of LED plus it is 'cool' i.e. generate very minimal heat that you can't feel it, its flexible and needless to say can be applied in many applications if one were to think of it.

As for the cost of power, I think the Government especially through TNB is not doing or not aggressive enough in terms of promoting renewable energy i.e. solar, wind or possibly wave. If you go through the process to implement such projects the friendliness and encouragement in terms of "funds" and "political will" is sadly a demotivating factor.

Malaysia as a nation can do more in terms of renewable energy. All we need is less councils and more common sense.

39.

pizzo's Gravatar pizzo

October 18, 2011 at 1:13 pm | [Permalink](#)

-

circa 1980/90 there was this malaysian MAcGyver engineer that goes by the name zulkifli, whom created a smart car, and then a concept of a smart house, where he created an idea of installing a water fountain that also functions as a small-scale independent hydro power plant.

If EVERY landed homes and buildings has such a system installed, it would take off a lot off the main energy grid.

He also created a smart energy management system:

1. All the lights inside the house will be turn on just when somebody is in a particular room

2. An auto switcher equipped with light-meter that can measure the light capacity within the space inside the house and make the decision of when it's time to switch on the light, or switch it off, for instance in condition when it's raining heavily during mid-day-automatically. Just like the mechanism used by street lights.

3. A system that enable the lights to switch off automatically as soon as the room occupant has gone to sleep – using a biorhythm pressure sensor. This is useful for those who requires leaving their lights open when they're about to sleep. The system can even turn off other electrical appliance like the radio.

But his ideas never got through.

Another way to save electricity is by improving the ventilation system on buildings and houses by changing the way buildings and houses are built.

I was intrigued why the building like houses in Malaysia is designed by following the templates of buildings from over sea like American and European countries, where the building keep heat which recirculate for use at night.

Being a night owl coming home late, it was late night around 3am and

cold. But when I finally step a foot inside my house I noticed it was very warm. I thought if only the building in Malaysia like houses can be made to match the temperature outside, which is very cold, we would need just very little to cool down the house at least at night.

Buildings in Malaysia doesn't have a need for such a system because we doesn't have Autumn or winter.

From my estimate calculations, I found that it is less costly to cool down a house by using sprinkler system to emulate the effects of rain than using air-conditioner. Simply because water bills costs far less than electricity.

With all due respect, Tun, the root of the problem wasn't because we can't have such a system or lacking the capability to create such a system.

It's whether the prospect of having such a system: where an individual can save electricity by generating their own will have the blessing of energy company or not?

The problem in pricing can be solved if the equipment is sold en mass, in bulk, providing a guaranteed purchase, where buyers can use a buying system such as Groupon.

<http://www.groupon.com/>

40.

aconite's Gravatar aconite

October 18, 2011 at 12:56 pm | Permalink

sambil lalu...

sembangx di warung bila sebut pasal bil elektrik:

- bil elektrik memang membebankan.
- penggunaan tinggi – keluarga besar.
- rasa tak puas hati.
- lewat sikit (sebulan) dapat notis nak potong.
- walaupun tertunggak rm10 – rm20 pun nak potong juga.
- bangunan TNB makin besar tanda berniaga maju.

semua ini perkara kecil & remeh :)

41.

axass's Gravatar axass

October 18, 2011 at 12:53 pm | Permalink

salam tun....

dah tukar semua lampu ke jimat tenaga, dan ada beberapa kali mmg xperlu bayar pada tnb...

dan sedang cuba2 tgk samada boleh guna solar untuk jimatkan lagi bila api... secara kecil-kecilan lah, sbb budget pon kecil...

mmg susah manusia nak tukar ke sistem baru sbb dah selesa dengan sistem lama... walaupun sistem baru berkelebihan... mmg sindrom xnak susah dulu, senang kemudian... suka nak senang dulu, susah kemudian baru kelam kabut...

wasalam...

42.

nys8982's Gravatar nys8982

October 18, 2011 at 12:28 pm | Permalink

all those who are in favour of teaching math & science in english
please join this group.<http://www.facebook.com/groups/201659423239872/>

43.

ROZALI BIN AYED's Gravatar ROZALI BIN AYED

October 18, 2011 at 12:14 pm | Permalink

Salam Y.A. Bhg Tun,

1. Memang tidak dinafikan kerajaan Malaysia telah membina banyak stesen penjaan elektrik bertempat di hampir seluruh pelusuk negara dengan tujuan membekalkan cukup tenaga elektrik untuk pengguna rakyat Malaysia dan pembangunan negara. Kos membina sesuatu loji penjaan elektrik memerlukan kos yang amat tinggi seperti pembinaan loji penjanaan elektrik di Bakun Sarawak.

2. Bahan fosil yang digunapakai untuk sistem penjanaan elektrik kosnya juga agak tinggi. Maka dengan demikian sudah tentulah kos tenaga elektrik yang kita gunakan mahu tidak mahu terpaksa dibayar dengan sesuatu harga yang bersesuaian dengan kos bahan fosil, kos pengurusan dan sebagainya. Pihak berkuasa penjanaan tenaga elektrik khususnya TNB dan termasuk IPP terpaksa menanggung kos yang tinggi dan pada yang sama memerlukan pulangan bayaran balik kos pemasangan loji penjanaan dan mengambil sedikit keuntungan yang sebahagiannya digunakan untuk kos pengurusan.

3. Kita masih ada alternatif untuk mengurangkan bil bulanan penggunaan tenaga elektrik dengan adanya teknologi baru terhadap

kelengkapan dan peralatan elektrik seperti lampu LED yang Tun sebutkan dan lampu-lampu yang direkacipta berkonsepkan jimat tenaga (save energy) dimana ianya lebih baik dari lampu pendaflour (fluorescent lights) yang biasa kita gunakan selama ini. Cuma lampu berteknologi baru ini harganya agak tinggi sedikit, tetapi mengikut pengalaman saya sendiri jangka hayatnya lebih lama dari lampu pendaflour, dan kita boleh membuat perbandingan dengan lampu-lampu jenis lama dari segi kos tenaga dan nilai cahaya yang lebih baik dan lebih memuaskan. Sama-samalah kita fikirkan.

Sekian, terima kasih dan Wassalam.

44.

amin tan's Gravatar amin tan

October 18, 2011 at 10:53 am | Permalink

Dear Tun,

You are so clever, scientific and analytical. But who are going to bravely implement it? I propose Tun stand for election in Putrajaya and get elected and get into parliament to be appointed as a mentor minister whose ideas and advice should not be ignored.

Some opposition detractors would always criticise as benefiting the cronies, the rich getting richer and so on. Let them bark at the mountain. If we listen too much to the opposition with vested political interests, nothing gets done.

amin tan

45.

fauzanafandi's Gravatar fauzanafandi

October 18, 2011 at 10:47 am | Permalink

LED light is expensive. Probably the government should look for ways to subsidize it, especially to poor people who are still using normal light bulbs?

<http://chedet.cc/blog/?p=610>