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The Real Cause of Global Warming and its Consequences on Climate Policy

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Abstract

Referring to a previous treatise of the author where the climate greenhouse theory is refuted in detail, firstly the most relevant arguments against this theory are alleged. Apart from some general reasons being apparent even for laymen, in particular the very low CO_2 concentration in the air, additional special reasons are mentioned. They are related to newly discovered absorption phenomena of IR (infrared) radiation at gases. Measuring the temperature enhancements in a tube made from Styrofoam, it was found that any gas adsorbs IR – even noble gases do so -, being warmed up to a limiting temperature which is achieved when the absorption power is equal to the emission power of the warmed gas. It could be theoretically demonstrated that the emission power of a gas is related to the collision frequency of their particles (atoms or molecules) and thus to their size. This explains that no significant differences could be found between argon, pure carbon-dioxide and air. As a consequence, a «greenhouse effect» does not really exist, at least not related to trace gases such as carbon-dioxide. However, within a recent publication of the author it could be shown that the discovered and theoretically explicatable thermal emission behaviour of gases can be applied on the counter-radiation of atmospheric air, which gave rise to a modification of the Stefan-Boltzmann relation, and which explicates why the atmospheric temperatures on mountains are generally lower than those on lowlands, in spite of the enhanced solar radiation intensity. However, this natural behaviour of the atmosphere cannot be influenced artificially. Instead, the absorption of sunlight by the Earth surface must be focussed, particularly the one of urban areas. It represents the real cause of global warming, since it remarkably governs the temperature of the atmosphere near the ground. Obviously, darker surfaces adsorb to a greater extent than bright ones, the former being warmed up more intensely. The ratio between reflected and absorbed radiation is called «albedo». But since measurements of the reflected radiation are quite delicate due to the scattering on the surface, a method has been suggested by the author detecting the temperature enhancement of well-defined coloured solid plates, allowing determining the solar absorption coefficients directly. Based on this method and their results, several measures at buildings are proposed for mitigating the climate, at least the microclimates in cities, and suggesting an alternative climate policy which is connected with air pollution policy and with energy policy. It stands in contrast to the common climate policy which exclusively propagates a global reduction of the CO_2 emission, and which completely disregards the albedo impact and thus the feasibility of influencing the climate by brightening the Earth surface.

Perspective

In the year 2006, the book and the film of the former US vice president and presidential candidate *Al Gore*, entitled «An Inconvenient Truth», stirred up the general public. This book and this film did not only emphatically illustrate the consequences of global climate warming but also establish an ostensible explanation alleged by prominent scientists. According to them the carbon-dioxide concentration in the air, arising within the recent period of time, induced a so-called greenhouse effect and was thus responsible for global warming. Al Gore's work was honoured by the Noble Peace Prize

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and the Documentary Feature Oscar, together with Davis Guggenheim.

At least since then this notion is regarded as the only accurate explication of global warming, being accepted by the large majority of experts and hold by the 'World Climate Council'. It was generally adopted by politicians, culminating in the global climate agreement of Paris 2015, and pursued in further climate conferences. But apart from the withdrawal of Donald Trump and the objections from the «climate doubters», no scientific objections have been made against this greenhouse theory so far, unanimously accepting it as an indisputable doctrine, and disregarding the phenomenon of the so-called urban heat islands, which is mainly induced by dark surface colouring, and which is well known for more than 180 years [1]. Rather, this phenomenon was associated with lower evaporative cooling from urban soil, because of the absence of plants, and additionally facilitated by lower heat convection [2].

However, it will lead to uncertainties when a large amount of insufficiently informed persons assess such a complex subject as atmospheric physics, which would require profound expertise in thermodynamics, kinetic gas theory and quantum mechanics, besides practical experience in measuring methods such as IR (infrared) spectroscopy. Moreover, the immense quantity of recent up-to-date publications impedes the survey, tempting to disregard the basic photometric work of John Tyndall which traces back to the end of the 19th century, and which initiated the greenhouse theory without having an idea of the modern wave concept initiated by Max Planck. Hence the familiarity with this theory usually turns out to be just a smattering of knowledge relying on an anonymous group of experts.

So it is not surprising that a solid comprehensive description of the greenhouse theory is not available, not even in textbooks such as [3-5]. It must be picked out from several sources wherein a critical discussion of the different variants was not delivered. Instead of scientific arguments, rather consent influenced by the majority opinion appears to be decisive.

Nevertheless, the greenhouse theory may be briefly described, not least by reference to simplifying articles in the internet which are relevant for the public opinion. It should be realized that it is based on a model, as the name «greenhouse» suggests. Its essential thoughts may be outlined as follows:

The incoming solar light is partly absorbed and partly reflected by the Earth surface. Its absorption degree is given by the complement to the so-called *albedo* which indicates the reflection degree of the Earth surface, and which mainly depends on its colouring. Due to this absorption, the surface of the Earth is warmed up. Simultaneously, and/or delayed, the warmed Earth surface emits medium-wave IR-radiation (= heat radiation or thermal radiation, wave-length λ = 3 – 50 µm) which is partly absorbed by the atmosphere, due to the so-called greenhouse gases, and partly emitted into Space. Therefore, the assumption is made that any warming-up of the atmosphere is exclusively due to a partial atmospheric absorption of medium-wave IR-radiation by such greenhouse gases.

As a consequence, the climate change discussion is usually reduced to the CO_2-question. Thereby some aspects of the greenhouse theory should even make the layman suspicious, apart from the difficulty of imagining the Earth atmosphere as a greenhouse. First of all, one should know that the synchronic appearance of two incidents does not prove their mutual interdependency. But such a fallacy is made when the temperature increase of the atmosphere is compared with the increase of its CO_2 concentration as it was first published 1982 by the 'Scientific American' [6]. This coincidence is still alleged as a proof for the causal impact of the carbon-dioxide on the atmospheric temperature, disregarding the possibility that another anthropogenic factor which goes along with the industrial progress could be responsible for this effect. The same is true when the shrinking of arctic sea-ice is compared with the increase of anthropogenic CO_2 emission [7].

A further doubt should emerge when the low concentration of the carbon-dioxide is taken into account, especially when it is known that its concentration value of 400 ppm is equivalent to 0.04 percent, thus amounting only to approx. a 2500th part of the air. If solely CO_2 absorbed thermal radiation leading to a temperature enhancement, it would have to co-warm up the surrounding air, which could not be possible to a considerable extent, due to its large heat capacity.

Finally, the intensification of winds and storms - right up to hurricanes, which accompanies the average global temperature enhancement, letting suppose horizontal growths of temperature gradients, seems not compatible with the perception of «greenhouse gases» which would rapidly dissipate, annihilating the gradients. After all, it is inadequate to reduce the climate change to an average global temperature, apart from the fact that it is badly defined and hardly determinable.

Besides these trivial objections, an additional objection has to be alleged, concerning the question whether – or to what extent – the absorbed radiation energy of a gas, measured by photometric or spectroscopic methods, is converted into thermal energy inducing a temperature enhancement. It cannot be deduced theoretically but needs empirical investigations. The common atmospheric physics – thus including the greenhouse theory – assumes *a priori* that this will be entirely the case. But this assumption has never been empirically verified so far. That was the reason for the author's own experiments [8, 9] where - instead of the intensity loss of the applied radiation - the temperature enhancements of irradiated gases were measured. They delivered quite surprising results.

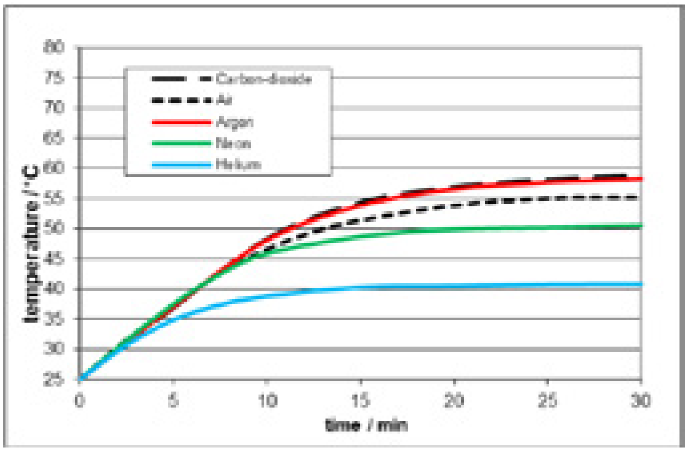
The Radiative Warming-up of Gases

The experiments were carried out with quadratic tubes from Styrofoam (25 x 25 x 100 cm) which were covered on both ends by thin plastic foils and equipped with thermometers at three different positions. For minimizing interferences, the thermometer bulbs and the tube walls were mirrored with thin aluminium foils (Figure 1). The tubes could be filled with different gases from steel cylinders. They were exposed to incident solar light as well as to artificial IR-light whose source was mounted on the top of the tube [8]. Additionally, measurements were made using a hot plate which was positioned on the bottom of the tube and which generated thermal radiation with a larger wave length [9].

Figure 1: Optimized solar-tube [8]

In any case, a temperature enhancement was detected leading to a limiting temperature which depended on the intensity of the light source and on the gas type. This phenomenon can be explained by the thermal radiation of the gas which increases with increasing temperature up to the extent where the radiated energy is equal to the absorbed one. Using the kinetic gas theory and comparing the results for helium, neon and argon (Figure 2), a proportionality of the thermal radiation power to the collision frequency of the molecules could be demonstrated, being given by the product of the square root of the absolute gas temperature, the pressure and the size of the molecules. But in particular, *no significant difference between pure carbon-dioxide, air and argon could be found.*

Figure 2: Time-temperature curves of different gases (150 W IR-spot, middle thermometer position) [8]



These results imply that carbon-dioxide has not the slightest influence on the warming-up of the atmosphere. This would be the case even if its concentration were much greater than it really is. Obviously, the absorption which is observed by means of IR-spectroscopy is followed by a radiative emission which happens without affecting the temperature of the gas. On the other hand, another kind of IR-absorption was discovered which affects any gas, leading to a temperature enhancement. However, this kind of absorption is so weak that it cannot be detected by usual IR-spectroscopy.

Additionally to these already crucial arguments, a number of further arguments have been alleged in [9] refuting the greenhouse theory and advising to abandon it. Moreover, a recently published investigation of the author [10] delivers a stringent explication of the isolating function of the atmosphere, letting suggest in some sense a greenhouse-like effect. However, this effect is exclusively due to the air pressure, i.e. to the atmospheric nitrogen and oxygen content, and not at all to trace gases such as carbon-dioxide. It also explicates the fact that the temperatures on mountains are lower than those on lowlands, in spite of the higher solar radiation intensity on the mountains.

The key for tackling this problem is delivered by the *Stefan-Boltzmann relation* which is commonly accepted as a natural law, but which has to be partially questioned. According to that, in the presence of the atmosphere the thermal radiative thermal emission intensity of the soil $\Phi_{emission,soil}$, which behaves like a black-body (BB), can be described by equation (1), implying that the thermal emission of the soil is reduced by a counter-radiation of the atmosphere equation (1):

$$\Phi_{emission,soil} = \sigma\left(T_{soil}^4 - T_{atm}^4\right) = \sigma\left(T_{BB}^4 - T_{atm}^4\right) \qquad (1)$$

Whereby σ = Stefan-Boltzmann constant
= $5.75 \cdot 10^{-8}\, Wm^{-2}K^{-4}$

T_{soil} = absolute surface temperature of the soil [K]

T_{atm} = absolute temperature of the ambient atmosphere [K]

This means that the atmosphere exhibits the same thermal-radiative behaviour as a black-body. But this seems rather curious even if the experimental verification, using aluminium plates, yielded incidentally quite consistent results. Nevertheless, this approach is not plausible, particularly when the newly found pressure-dependent radiation behaviour of gases is regarded.

As a consequence, an alternative approach was proposed, maintaining the atmospheric counter-radiation concept, but generalizing the thermal-radiative behaviour of gases by applying it on the near-ground atmosphere. Besides, the additionally found equivalence of black-body radiation and of solid opaque body (SOB) radiation was implemented, leading – in the absence of incident solar light – to the equation (2):

$$\Phi_{emission,soil} = \sigma \cdot T_{soil}^4 - A \cdot p_{atm} \cdot T_{atm}^{0.5} = \sigma \cdot T_{SOB}^4 - A \cdot p_{atm} \cdot T_{atm}^{0.5} \qquad (2)$$

Whereby A = atmosphere emission constant
$[Wm^{-2}bar^{-1}K^{-0.5}]$

p_{atm} = atmospheric pressure [bar]

Using the below described equipment, measurements at different altitudes and thus at different atmospheric pressures enabled to verify this equation sufficiently accurately, yielding an A value of approx. $22\, Wm^{-2}bar^{-1}K^{-0.5}$. *It essentially represents a natural law.*

This means that the thermal emission of solid Earth surface, being approximately describable as a solid opaque body, increases when the atmospheric pressure decreases, due to a larger altitude. As experience teaches, it leads to a lower surface temperature, in spite of the higher intensity of the incident solar light due to a lower absorption by the thinner atmosphere. Therefore, the atmosphere acts as an isolator being fortified by a larger thickness. This suggests that the average temperature of the Earth surface and of the boundary layer of the atmosphere would be lower if the atmosphere were thinner. And this also means that the atmosphere plays a vital part enabling life on Earth, besides its function as an oxygen reservoir, and that life would probably not be possible if the atmosphere exhibited another consistency than it really does. This is a wonderful natural phenomenon which cannot be influenced artificially.

Instead, the only possible way of influencing the climate is given by modifications of the Earth surface, particularly of its colouring. It concerns the *albedo effect of the Earth surface* which is correlated to the lightness of colourings. Being particularly obvious in the case of the so called *urban heat islands,* it has been known for a long time and cannot be denied. Even if there exists an extensive specialized literature propagating 'white roofs' or 'cool roofs', it has been disregarded so far in the public, neglecting it in the climate discussion, and giving precedence to the greenhouse doctrine. Thereby it has been ignored that the albedo, being defined as the intensity ratio between the incident solar light and the light which is reflected by a coloured surface, would act a considerable part – and this even if the greenhouse theory were accurate -, since it governs the temperature of the Earth surface. Hence articles such as the one by H. Hoag suggesting measures "to beat the heat in cities" [11] are still exceptional. The difficult practical determinability of the albedo at materials may be a reason for avoiding the issue. However, the recently published own method [12], where instead of the albedo the complementary solar absorption coefficient is measured, promises a solution to the problem.

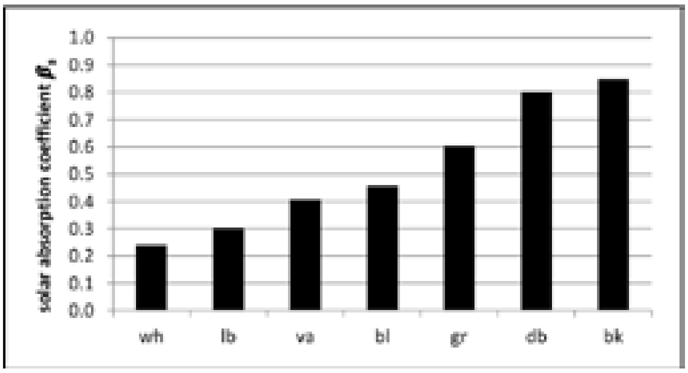
The Determination of the Solar Absorption Coefficient

The here proposed alternative method is based on temperature measurements at coloured opaque plates, yielding *direct* values being relevant for the warming-up process and allowing a precise characterization of the materials, while the usual method for detecting the albedo which has been applied so far is based on measurements of the reflected but scattered radiation, delivering solely *indirect* values.

Using this method [12], the temperature rise of coloured plates, preferably from aluminium, was measured in the presence of vertically incidental solar light (Figure 3). The temperatures were measured at regular intervals of 5 minutes using thermometers which were centrally inserted in respective holes. The heating-rate could easily be determined by graphically assessing the initial slope. It turned out to depend not only on the surface colour of the plate but also on its *volume-specific heat capacity*. Evaluating the time/temperature-plots for different coloured plates, their specific *solar* reflection *coefficients* $\alpha s = 1 - \beta_s$ (defined as the quotient between the incident and the absorbed power) could be calculated, delivering the results displayed in Figure 4. Furthermore, assuming complementarity to 1, the *solar absorption coefficients* β_s could be easily derived. However, it was proposed to distinguish between the solar reflection coefficient and the albedo, the latter one being related to a white surface, according to the original meaning of the word. Thus the *albedo* represents a *relative value*, being 1 for a white surface. As a consequence, according to this proposition the albedo and the solar reflecting coefficient are *not* equal, the latter one being smaller than the former one.

Figure 3: Panel comprising six modules [12]

Figure 4: Solar absorption coefficients βs on alumina [12] (wh = white, lb = light brown, va = vanilla, bl = blue, gr = green, db = dark brown, bk = black)



As it can be anticipated, such plates being exposed to direct sunlight will not be warmed up ad infinitum, but only up to a *limiting temperature*. Thus the time/temperature-curves will, sooner or later, flatten losing their initially linear character. This phenomenon is already hinted when, instead of aluminium, plates from *wood* are inserted which exhibit a lower heat capacity implying a quicker warming-up. Obviously, this can be explained with the *emission of thermal radiation* and an additional *heat transfer between the plate and the ambient air* which both effect cooling-down, being temperature dependent and growing till its intensity is equal to the intensity of the absorbed incident solar radiation.

This cooling-down-effect was studied separately in a darkened room, using the same embedding as the one which had been used for the warming-up measurements, but starting from an elevated temperature achieved by preheating the plate in an oven. As expected, the cooling-down rates depended on the heat capacity of the material, leading to lower cooling-down rates for materials with a high heat capacity. But unexpectedly, they did *not* depend on the surface colour. Moreover, besides thermal radiation, additional heat transfer was involved. As the analysis yielded, the curve-course was exponential, exactly describable with a mathematical equation. Moreover, the *heat transfer coefficient* could be determined from these experimental data, turning out to be in the first approximation *independent of the material* but *dependent on the surrounding atmosphere*. However, as it is plausible, the heat conductivity of the material is decisive, too, but scarcely calculable.

The mathematical combination of the respective formula yielded an equation which allowed the mathematical modelling of the time/temperature courses of differently coloured plates. Thereby it turned out that *the limiting temperature is independent of the heat capacity, but dependent on the irradiation density, on the solar absorption coefficient, and on the heat transfer coefficient*. However, the *proportions* of the limiting temperatures are equal to the proportions of the warming-up rates and thus of the heat absorption coefficients. This is visualized in the figures 5 and 6 where the temperature courses at differently coloured aluminium-plates, as well as at brick-plates, are plotted. They reveal that the heating-rates of the aluminium-plates are much smaller than those of the brick-plates – namely due to the larger heat capacity, while the limiting temperatures are equal in both cases.

Additionally, in [12] a simplified method is proposed using a light meter as it is common in photography (Figure 7). It is especially suited for field measurements. However, it allows solely measuring *relative* values to a white surface, and thus determining the albedo values but not the solar absorption coefficients. The latter ones can be calculated when the β_s value of the white reference plate is known. This was the case here since for both methods the same colour types were applied. As the comparison made in Figure 8 reveals, the values which were obtained by this method were satisfyingly accurate.

Figure 5: Temperature courses at differently coloured aluminium-plates [12]

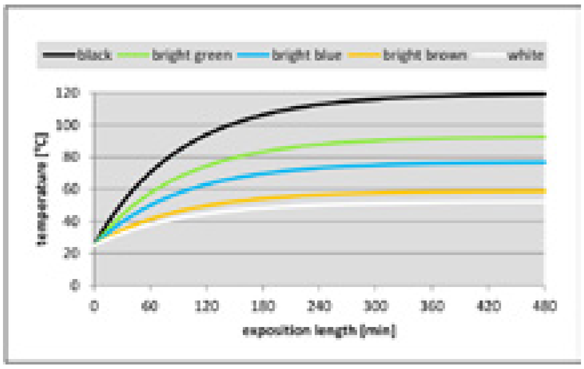


Figure 6: Temperature courses at differently coloured brick-plates [12]

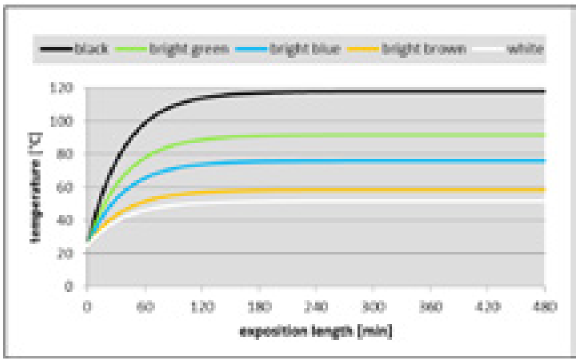


Figure 7: Assembly for the relative albedo-measurement by a light meter [12]

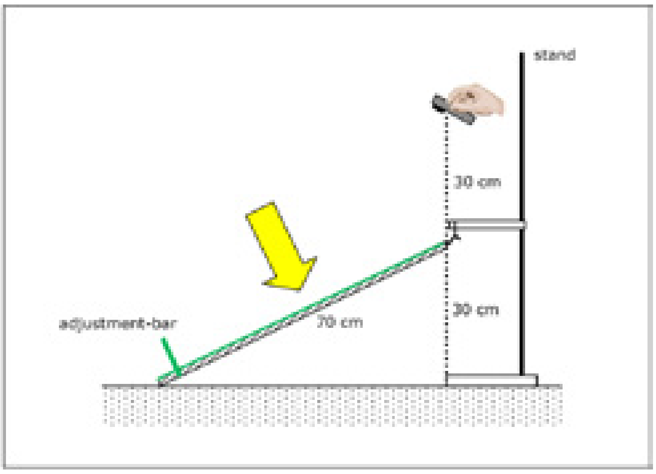
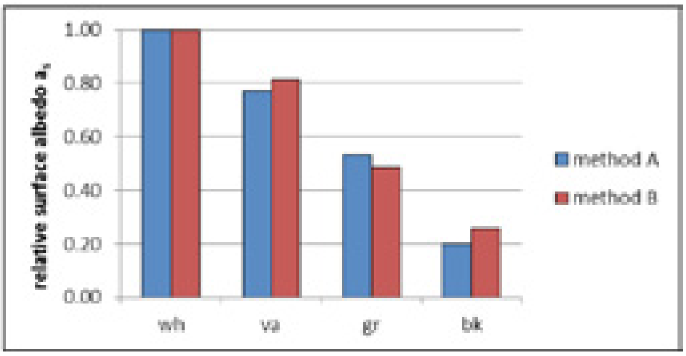


Figure 8: Method-comparison by means of the albedo-values [12] (method A = absolute caloric; method B = relative by a light meter)



Promising Measures at Buildings for Mitigating the Micro-Climate

The implications and results of this method deliver some principal hints which were elucidated in [13] with respect to constructional measures at buildings and urban areas for improving the micro-climate and also the living comfort inside the houses, even if exact forecasts are not possible.

1. The most important influence is due to the *surface colouring*. As obvious from Figure 4, (bright) green is not advantageous for applications at buildings since it exhibits a comparatively high solar absorption coefficient. Certainly, it is true that the *green colour of plants* differs from the artificial green colour which was used in the experiments. It plays an important part in nature since the chlorophyll of the plants is needed for photosynthesis. However, a vegetative temperature regulation by water evaporation is required. Moreover, vegetated areas need maintenance. Hence planted «green roofs» do not significantly contribute to mitigate the micro-climate,

especially when they solely contain lawns. In particular for roofs, rather a *light-brown* or *straw-yellow* colouring is preferred, as shown in Figure 9, while facades should preferably be white or at least less bright than the roofs. For this purpose, normal colours may be used. Special wondrous paints which lately appeared on the market, promising that black colour takes a white colour effect [14], have not been tested yet using the method described in [12], but they seem to be questionable. Photovoltaic roofs behave contrariwise because of their dark colouring.

Figure 9: Crude red-brick (βs = 0.53) and painted one (bright brown, βs = 0.30) [13]

2. The colouring of *pavements* appears to be problematic since they are exposed to a high pollution and since the normally ensuing grey colour is not too bad. White colouring is out of question since it blinds too much. Light-brown or straw-yellow would be optimal, also from aesthetic reasons, but it seems difficult to be realizable. replacing asphalt to an acceptable price. So it does not have highest priority. Moreover, a further aspect has to be regarded: the (micro-) climate does not solely concern the temperature just above the ground, i.e. the pavements, but the lowest atmospheric layer as a whole. Hence, the roof-level is of considerable importance even if a pedestrian does not directly feel it. Trees, parks and canopy roads provide shade and contribute to embellish the landscape, emphasizing the emotional component of the climate. However, they do not favour the albedo and thus the radiation budget of a city since their cooling effect is mainly due to evapotranspiration, while the part of energy consumption by photosynthesis is probably low but hard to estimate. In particular, it will not be possible to knock down buildings to a considerable extent, replacing them by trees. Thus the strategy must consist in lightening the cities but not in greening them.

3. However, the best colouring is of limited use when it is destroyed by *weathering*, as it is normally the case with tiled roofs (Figure 10). This may be prevented by a protecting layer, preferably by paint. At ancient roofs, this can be made afterwards, too, but then it needs a prior cleaning. Presumably, the weathering of tiles is fortified by acid rain due to a high CO_2-emission in the surroundings. This phenomenon should be a warning signal to the fact that CO_2 being emitted in large quantities as a result of fossil fuel combustion, combined with soot, fine dust and other waste gases such as nitrous gases, still represents a considerable source for environmental pollution implying hardly assessable consequences such as acidification of the oceans, presumably leading to a damage of the marine plankton.

Figure 10: Roof with recently substituted bricks [13]

4. A further relevant criterion concerns the *construction materials* since they influence the heating rate due to their heat capacity. Obviously, a high heating rate of walls engenders a high heating rate of the ambient atmosphere. It may be induced either by a dark surface colouring or by a low heat capacity of a wall. A well-insulated wall which exhibits a low heat capacity is solely warmed up at its outer layer since the heat cannot be dissipated within the wall. As a consequence, the ambient atmosphere is heated up while the interior of the house is not affected. For this climatic reason, house walls made from *stone* are better than those from *wood* which isolates well but exhibits a low heat capacity. Likewise, additional layers from *artificial isolating materials* should preferably be attached *inside* the house walls, and not outside. Moreover, *glass facades* and *windows* induce *thermal traps*, thus being unfavourable.

5. The *building dimensions* as well as the *ambient ground* influence radiation characteristics, too. Thereby, considerable radiative interactions between the ground

and the facades are to be expected while flat roofs are independent of the other parts. By contrast, gable roofs may partly influence each other, due to the reflected light. In general it can be stated that the solar radiation absorbance of a building group is increased when its *macro-roughness* is increased. It mainly depends on *the proportion between altitude and latitude* of the buildings. Thus low houses inherently engender an inferior macro-roughness than high houses.

Summary and Conclusions

The here presented facts reveal that dark colouring of the Earth surface, particularly in cities, represents a special type of environmental pollution. It is high time to realize this, while the greenhouse theory has to be recognized as a phantasm, yielding erroneous forecasts and suggesting false and inefficient measures. The only opportunity to mitigate the climate – or at least micro-climates – is given by brightening the Earth surface including the proposed accompanying measures, additionally combined with reducing the macro-roughness due to high buildings. Thereby not only the average temperature has to be regarded but also the emergence of temperature gradients, which may be due to local colour differences, and which may thus be responsible for storms. Such a brightening may also be an opportunity to beautify the buildings, in particular the roofs, since the colours which are suited for improving the albedo – or inversely for reducing the solar absorption coefficient – are also suited for embellishing the houses and for improving the living comfort inside the houses. This will also bring an individual benefit to the homeowners. Thereby the applied colours may vary within a specified tinge leaving a margin for the architects.

In particular, first of all dirty gabled roofs - as shown in Figure 11 – should be cleaned and painted bright-brown. As the example of a renovated guildhall demonstrates (Figure 12), architects of an earlier epoch exhibited not only an excellent aesthetic taste but also the knowledge of correctly colouring roofs. While the example of Detroit shown in Figure 13 tells its own tale with respect to tasteless modern buildings, the example of Cape Town, out-flanked by the dark 'Table Mountain', (Figure 14) suggests that natural circumstances may provide considerable challenges in solving such problems, which in this case may be related to the menacing running out of water. Unfortunately, the main stream of prestigious black sky-scrapers, as shown in Figures 15-17, represents the worst example with regard to the climate, while positive examples such as those shown in Figure 18-20 are seldom.

Figure 11: Historic district in Zug (Switzerland)

Figure 12: Guildhall in Zürich (Switzerland)

Figure 13: District in Detroit (USA)

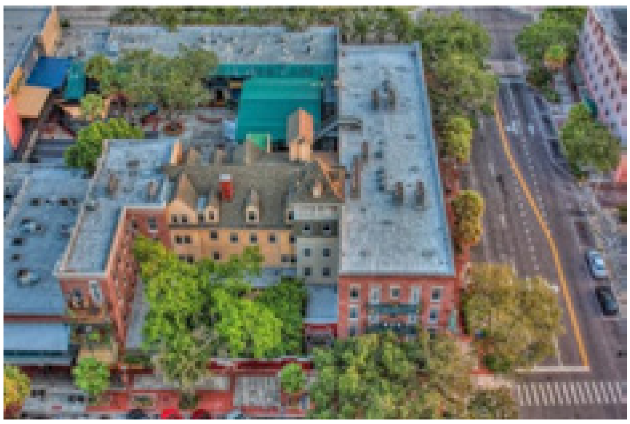


Figure 14: Cape Town and Table Mountain (South Africa)

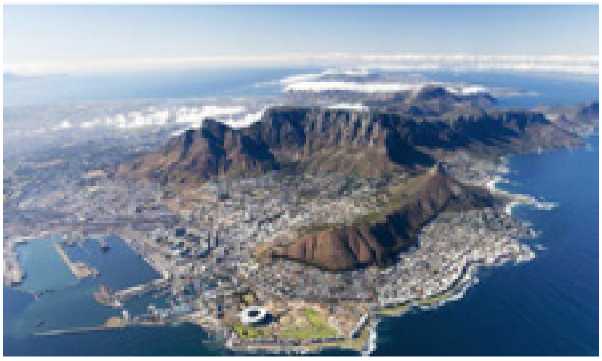


Figure 15: Sky-scrapers in New York (USA)

Figure 16: Sky-scrapers in Frankfurt (Germany)

Figure 17: Sky-scrapers in Riad (Saudi Arabia)

Figure 18: Capitol in Washington (USA)

Figure 19: House in Algeria

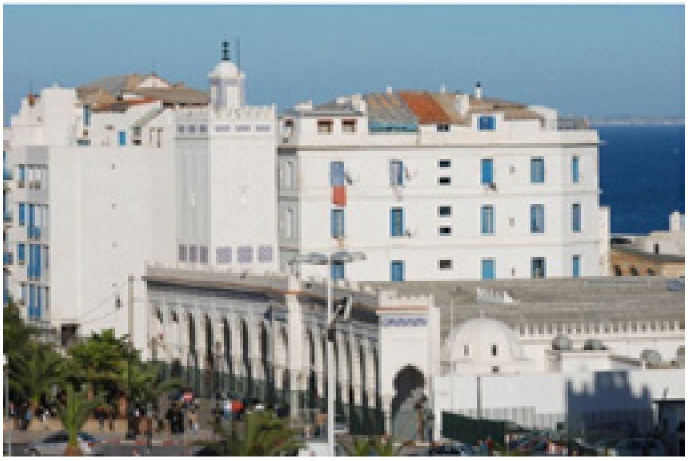


Figure 20: House in Glattbrugg (Switzerland)

For achieving a perceptible result, probably hundreds of millions of roofs would have to be lightened. Obviously, the effect will be intensified at southern locations, but a forecast seems not possible in view of the complexity of the circumstances. However, the efficiency of the taken measures should be monitored. Measures at landscapes are also conceivable but more expensive. Thereby it seems plausible that dark pollutions in the oceans will lead to temperature enhancements of the sea water which may promote the emergence of hurricanes. Altogether, the statement that no CO_2-dependent climatic greenhouse exists does not deliver a blank cheque to an unlimited consumption of fossil fuels since they induce other pollutions, apart from the fact that their reserves are not unlimited.

But even though these coherences have not been entirely known so far, the temperature reducing albedo effect of bright surfaces is not new but even self-evident for everybody. Not least southern countries traditionally made use of it, while white or bright-brown houses and roofs are common. Hence the question arises why climate campaigns do not implement such measures, disregarding the albedo aspect, and why they pursue rather climate protection than climate mitigation [15]. And in particular: Why does the public opinion agree upon an unintelligible percept, while it disagrees upon an intelligible one? A possible explanation will be given below, revealing the connection between the common climate policy, the air pollution policy, and the energy policy.

Climate Policy and its Connection with Air Pollution Policy and with *Energy Policy*

The postulations and the overlaps of these three policy domains are well known. But the fact, that they do not affect the same sectors and the same strata of the population to the same extent, is less evident and was not explained so far. Hence a short analysis is made here, revealing some remarkable effects.

Energy Policy affects everybody insofar as the global energy reserves are affected and thus modern civilization which depends on it. However, presently there is no lack of energy. Rather there is an energy excess. Thus the original supply argument for alternative energies such as photovoltaic and wind energy is not yet appealing. Solely the greenhouse argument is alleged, promising a CO_2 reduction and therefore climate mitigation. However, this is an illusion in two different respects: Firstly, the falsity of the greenhouse theory implies that the CO_2-concentration in the atmosphere has not the slightest influence on its temperature, as explicated above. And secondly: Even if the greenhouse theory were correct, it would be completely impossible to substitute the huge quantity of the total required energy – i.e. not only of the electric energy – by alternative energies, also since a suitable energy storage is not possible unless with batteries. Hence the only reason for propagating alternative energies – except special applications – is motivated by promoting the growth of the respective industry, and thus by affecting solely a privileged part of the population, in particular when this kind of energy is subsidized by the state.

Air Pollution Policy affects manly populations of cities, particularly in the form of automobile exhausts. Thereby, diesel-engines emit more exhaust gases than petrol-engines because of their enhanced NO_x-emission. Moreover, the CO_2-argument is alleged for promoting electric cars. But instead of promoting private electric cars, which are solely available for wealthy persons, and nevertheless congesting the streets, *car-poor cities* – and not car-free ones - should be propagated, combined with an enhancement of inexpensive public transport. Moreover - and in particular - *re-dimensioning of mega-cities* should be aspired, implying de-urbanization and - as a consequence - private traffic reduction, energy saving and decreasing of climatic urban island effects.

Climate Policy mainly affects the poorer part of the population, particularly the rural and agricultural one, at least as no production-breakdown down occurs, which would lead to considerable scarcity of food for the well-off part of the population. So for the latter one climate change is actually irrelevant, in particular since counter-measures may be made, such as air-conditioning. Climate change is even advantageous in view of the respective industry which promises high-tech solutions, highly qualified jobs and economic growth, while the Treasures of western states profit in the form of CO_2-taxes. On the other hand, the potentially numerous jobs for realizing the here proposed albedo improvements require only low qualifications and are thus undesirable for industry. Because the former climate prognoses were vague and numerically widely spread, they are not taken seriously by the majority of the population, but are rather encouraging the cause of climate doubters. Nobody really believes in an emergency case. But if this case would arrive, it would be too late for taking effective measure.

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