Neil Chaudhary, Chair George Ferguson Tony Filiato Mary Ann Jacob Dan Honan Paul Lundquist Vice Chair Bob Merola



3 Primrose Lane Newtown, CT. 06470 Tel. (203) 270-4210 www.newtown-ct.gov

Draft Minutes of the Legislative Council Education Committee Meeting.

The Education Committee met on Monday, March 23, 2015 in Meeting Room One, Newtown Municipal Center, 3 Primrose Lane, Newtown. Chairman Neil Chaudhary called the meeting to order at 7:30 pm.

Present: Ms. Jacob, Mr. Ferguson, Mr. Filiato, Mr. Honan, Mr. Lundquist, and Mr. Merola.

PUBLIC COMMENT: None.

Mr. Ferguson moved to accept the minutes of the April 2, 2014 meeting. Mr. Lundquist seconded. The motion passed without objection; Mr. Merola abstained.

Mr. Chaudhary reminded the Committee the purpose of the meeting was information gathering, not deliberation.

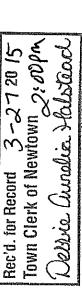
Dr. Erardi distributed materials regarding the state Equal Cost Sharing (ECS) formula. Legislation has been discussed to correct the shared cost ratios. If passed, Newtown would receive approximately \$4.6m in additional funding from the state.

Ms. Jacob led a discussion regarding the technology funding requested in the budget. The Council had discussed in the past the suggestion that such items be dealt with over several years, perhaps five, of requests so that the costs would smooth out over the years and provide predictability to the budget. As the requested funds if not spent in a current year would be shifted to a separate fund, there was no danger of the funds being used in regard to emergent items or covering gaps elsewhere in the budget. This would, of course, require a great deal of cooperation and trust between the various Boards involved in the process. Mr. Lundquist added that this methodology should also be considered for building and maintenance issues.

Mr. Merola voiced his concerns regarding enrolment and MBR. Mr. Erardi noted that enrolment had increased by 13 students between October and January. Mr. Ferguson noted that the chart in the proposed budget displaying enrolment versus teacher count employs scales that make it appear that teacher count has reduced in line with enrolment drop; however, arguably the enrolment drop was much more severe than depicted by the scale. Dr. Erardi explained the reasons why teachers had been added on the high school level in 2010 and why they had not dropped off in line with the enrolment decrease. This involved an election to move to a 24 credit requirement for freshmen entering last year; additional Special Needs positions; and a wider variety of AP courses. Dr. Erardi explained that the additional AP courses were largely responsible for Newtown becoming a nationally ranked high school. The wide range of courses did result in a variety of class sizes, some core courses as high as 25 students, with perhaps a specialty art course only enrolling 8-9 students. Mr. Ferguson added that NEASC recommendations also played a role in teacher levels.

Mr. Filiato requested information regarding administrator to teacher ratios. Dr. Erardi agreed to provide as soon as possible. Mr. Chaudhary requested a report from the contracted bussing company regarding bus usage, which Dr. Erardi agreed to provide.

Mr. Chaudhary noted that after the Finance Board reductions, the BOE budget would only be increased by about \$200k. However, he was quite concerned about future years, particularly in regard to the Affordable Care Act "Cadillac Tax" and the expiration of security grants. Dr. Erardi believed that the Cadillac Tax issue would not be going away and that the impact to the BOE budget could be approximately \$1.2m.



However, he noted that the results of the Facilities study might provide a means to offset the increase. Overall, the increase in the proposed BOE budget amounted to .34%. Dr. Erardi agreed that the SERVE grant and DOJ grants would be running out soon. BOE Vice Chair Hamilton added that teacher contracts would be due for negotiation in the near future, which would be an additional factor to consider.

Ms. Jacob inquired whether the Health Coordinator position would be filled. Mr. Erardi replied that the K-12 Coordinator would not be replaced this year, as others filled the role, but the position funding would be requested in the 2016-2017 budget.

Mr. Merola pointed out that had the budget been reduced under MBR over the past 5 years that it would be approximately \$66m. He was not proposing an MBR cut, but wished the information to be available to the public. Mr. Merola expressed a further concern that nothing ever seems to "sunset" in the BOE budget and nothing is ever de-funded. Mr. Filiato pointed out that there are several examples of the BOE defunding certain traditional activities, noting for example that the High School Marching Band is essentially funded by the associated parent corporation at significant expense and that sports are now "pay to play" in the district.

Mr. Ferguson summarized that he believed the proposed budget was quite well-crafted and complimented Dr. Erardi on his work. Ms. Jacob added that the level of detail provided in the budget book is much greater than had been traditionally provided to the Council. BOE Chair Alexander thanked the Committee for its time and added that he believed that the discussions held were quite valuable.

There was no voter comment.

The date of the next meeting was set for Wednesday April 1st at 6:30 pm prior to the Legislative Council Meeting.

Mr. Honan motioned to adjourn at 8:45 pm. Mr. Filiato seconded.

Respectfully Submitted, Anthony R. Filiato, Esq. Legislative Council Education Committee

Bloomberg

Oil Rises as OPEC Sec-General Says Group May Cut Target

By Mark Shenk - Sep 16, 2014

West Texas Intermediate climbed to a two-week high and Brent gained after OPEC's secretary general said the group may cut output targets next year.

Abdalla El-Badri said today that the Organization of Petroleum Exporting Countries' production quota could fall 500,000 barrels a day to 29.5 million barrels a day next year. El-Badri was speaking at OPEC's secretariat in Vienna after talks with Russian Energy Minister Alexander Novak. WTI has tumbled 13 percent since touching \$107.73 a barrel on June 20 as Asian and European economies have showed signs of slowing while crude output gained.

"After the significant decline in prices, investors were looking for a reason to get into the market and El-Badri's comments gave them that," <u>Michael Lynch</u>, president of Strategic Energy & Economic Research in Winchester, <u>Massachusetts</u>, said by phone. "El-Badri said this was an outlook, not a decision, but the market is still taking it as a positive sign."

WTI for October delivery rose \$1.96, or 2.1 percent, to \$94.88 a barrel on the New York Mercantile Exchange. It was the highest settlement since Sept. 3. The volume of all futures traded was 27 percent above the 100-day average at 2:48 p.m. Prices have decreased 3.6 percent this year.

Brent for November settlement increased \$1.17, or 1.2 percent, to end the session at \$99.05 a barrel on the London-based ICE Futures Europe exchange. Volumes were 11 percent lower than the 100-day average. The North Sea oil traded at a \$5.24 premium to the November WTI contract.

'Look Better'

"I am not really concerned about the prices declining at this short term," OPEC's El-Badri said. "I think the price will rebound by the end of the year. When we're coming to the fall, things will look better."

<u>Saudi Arabia</u> cut its crude production by 408,000 barrels a day to 9.6 million in August, the biggest reduction since the end of 2012, the kingdom said in a submission to OPEC.

OPEC officials, including Saudi Arabian Oil Minister <u>Ali Al-Naimi</u>, have said they see no urgent need to respond to oil's drop. Prices "always fluctuate and this is normal," Al-Naimi told reporters in <u>Kuwait</u> on Sept. 11. Oil will recover as demand for winter fuels climbs, Kuwaiti Oil Minister Ali Al-Omair said the same day. The group is next due to meet on Nov. 27.

'Huge Decline'

"The huge decline in prices since June has been a major concern to all oil producers," <u>John Kilduff</u>, a partner at Again Capital LLC, a New York-based hedge fund that focuses on energy, said by phone. "The Saudis have already started to cut output and now we're getting evidence of further action. The market appears to have found a bottom and the statements are a sign for the buyers to return."

Russian and OPEC analysts will meet in the spring, Russian Energy Ministry spokeswoman Olga Golant said by text message. "High-level" talks are scheduled for the second half of 2015, according to a joint statement from OPEC and Russia today.

"I wouldn't be surprised if the Russians and OPEC cooperated to support the market," Bill O'Grady, chief market strategist at Confluence Investment Management in St. Louis, which oversees \$2.6 billion, said by phone. "It's in the interests of both parties to keep prices from falling further."

Nigeria Strike

Workers at Nigerian National Petroleum Corp., the country's state-owned oil company, began an indefinite strike that may disrupt crude output from <u>Africa</u>'s top producer, Babatunde Oke, a Lagos-based spokesman for both a managers' union and a blue-collar workers' union, said by phone today. The country produced <u>2.3 million barrels</u> a day in August, the most since 2006, according to data compiled by Bloomberg.

U.S. aircraft bombed Islamic State fighters near <u>Baghdad</u> in the latest expansion of an air campaign that began last month, Central Command said in a statement. The strike follows President <u>Barack Obama</u>'s vow in a Sept. 10 speech to "degrade and ultimately destroy" the organization that has seized large swaths of northern <u>Iraq</u> and parts of neighboring <u>Svria</u>.

Crude futures surged when the militants captured the northern Iraqi city of Mosul.

Federal Reserve policy makers are meeting today and tomorrow. Fed Chair Janet Yellen is set to increase interest rates gradually between 2015 and 2017, according to a Bloomberg survey of

economists. The Fed has been saying since March that interest rates would stay low for a "considerable time" after it completes the asset purchases known as quantitative easing.

U.S. Stockpiles

An Energy Information Administration report tomorrow will probably show that U.S. crude inventories decreased 1.5 million barrels last week, according to the median of nine estimates in a Bloomberg survey.

Gasoline supplies fell 125,000 barrels during the week ended Sept. 12, according to the median estimate. Stockpiles of distillate fuel, a category that includes diesel and heating oil, probably increased 750,000 barrels.

October gasoline futures rose 2.8 cents, or 1.1 percent, to close at \$2.5588 a gallon on the Nymex. Ultra low sulfur diesel for October delivery climbed 1.67 cents, or 0.6 percent, to \$2.7563 a gallon.

Gasoline pump prices fell 0.9 cent to \$3.381 a gallon nationwide yesterday, the least since Feb. 18, according to AAA, the largest U.S. motoring group.

To contact the reporter on this story: Mark Shenk in New York at mshenk1@bloomberg.net

To contact the editors responsible for this story: David Marino at dmarino4@bloomberg.net Stephen Cunningham, Charlotte Porter

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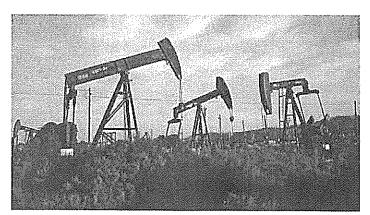


ENERGY

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Brent hits 26-month low under \$97 on weak China data

1 Hour Ago



Brent crude slumped to a more than two-year low under \$97 per barrel on Monday as a slew of lackluster economic data from China, the world's top energy consumer, cast a shadow on the outlook for oil demand amid abundant global supplies.

Analysts have warned of a potential hard landing at the world's No.2 economy after the country's factory output grew at its slowest pace in nearly six years last month, stoking fears of lower oil demand growth in the key consumer.

Read More > Gas relief: Falling fuel gives retail sales a boost, keep import costs tame

October Brent, which expires on Monday, fell to as low as \$96.21 a barrel, the lowest since July 2, 2012. The contract recovered to trade just under \$97, down 30 cents. November Brent was down around 50 cents above \$97.

U.S. crude was flat near \$92 a barrel, down \$1, after pring earli \$90.63 - near a 16-month low of \$90.43 hit last week.



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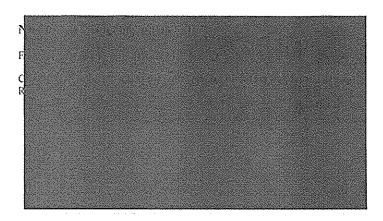
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"Obviously economic growth in China is one of the key drivers of world growth and generally of oil demand," Ric Spooner, chief market analyst of CMC Markets in Sydney said.

"As it currently stands, it seems likely that the (oil) demand growth won't keep up with the growth in supply capacity."

The Chinese data, which includes a drop in power generation for the first time in four years, came on the heels of downward revisions in 2014-2015 global oil demand growth by the International Energy Agency last week.

On the supply front, Libya's oil production is expected to rise to 1 million barrels a day in October

Gulf delegates attending a meeting of oil ministers from the region said the price drop was unlikely to spur action from the Organization of the Petroleum Exporting Countries (OPEC) unless crude fell below \$85 a barrel,

Ample supplies and weak demand have hit oil prices in recent weeks, but investors continue to keep an eye on geopolitical tensions for indications of any new threat to supply

--By Reuters

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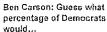
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ENERGY



Brent sinks to new lows on China fears Crude was hammered to a 2-year low by new Chinese data that stoked demand fears.



Solar power carves niche in oil drilling A company that uses solar is helping to keep oil drilling viable.



Russia sanctions to stall Exxon's Arctic oil plans

Exxon Mobil's ambilions in Russia appear to have been dashed, at least until the Ukraine crisis is resolved. The NYT reports,



yab s ME\$ arns \$3M a day Islamic State militants, who once relied on wealthy Persian Gulf donors for money, have become a self-sustaining financial juggement.

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UPDATE 6-Oil hits 26-month low under \$97 on weak China data

Mon Sep 15 2014 1:22pm GMT

Print | Single Page

- * China factory output growth slows to near six-year low
- * Libya oil production set to reach 1 million bpd in October
- * Investors eye stronger dollar ahead of Fed meeting
- * U.S. and EU impose fresh sanctions on Russia over Ukraine (Updates prices; paragraphs 3-4)

By Christopher Johnson

LONDON, Sept 15 (Reuters) - Brent crude oil fell below \$97 per barrel on Monday to its lowest in more than two years as lacklustre economic data from China, the world's top energy consumer, cast a shadow over the outlook for oil demand at a time of abundant supply.

China's factory output grew at the weakest pace in nearly six years in August, while growth in other key sectors also cooled, raising fears the world's second-largest economy may be at risk of a sharp slowdown.

October Brent, due to expire on Monday, fell as low as \$96.21 a barrel, its weakest since July 2, 2012. The futures contract recovered to around \$96.70 by 1325 GMT, down 41 cents.

U.S. crude was down 40 cents at \$91.87, after touching \$90.63 - near a 16-month low of \$90.43 hit last week.

"Struggling global economic growth has resulted in falling growth in global oil demand," PVM oil analyst Tamas Varga said, adding that concerns over conflict in the Middle East, North Africa and Russia had not translated into supply disruptions.

Chinese data, which showed a drop in power generation for the first time in four years, came on the heels of downward revisions in 2014 and 2015 global oil demand growth estimates by the International Energy Agency last week.

On the supply front, Libya's oil production is expected to rise to 1 million barrels per day (bpd) in October. Libya was supplying almost nothing to world oil markets four months ago.

Oil ministers from the Middle East Gulf said last week the oil price drop was unlikely to spur action by the Organization of the Petroleum Exporting Countries (OPEC) unless crude fell below \$85 a barrel.

A rally in the U.S. dollar against major currencies has also helped weaken oil. Investors will be closely watching the meeting of the Federal Open Market Committee later this week for clues on when the United States will raise interest rates.

A stronger U.S. currency makes dollar-denominated oil more expensive for holders of other currencies.

Investors continue to keep an eye on geopolitical tensions for indications of any new threat to supply.

The United States and European Union imposed fresh sanctions on Moscow last week, hampering exploration of Russia's huge Arctic and shale oil reserves and setting rules on tougher financing of existing Russian projects. (Additional reporting by Jane Xie in Singapore; Editing by Michael Urquhart)

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Monday, September 15th

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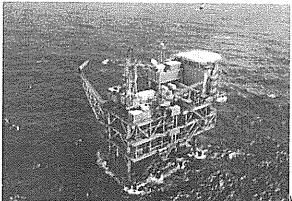
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<u>Crude oil trading outlook: WTI and Brent</u> <u>futures extend slide after China data</u>

September 15, 2014 7:11 am



early trade in Europe today, as investors priced in disappointing data from China. Prices were pressured by a number of bearish reports on global supply and demand disbalances last week, while geopolitical tensions failed to offer meaningful support.

WTI futures for October delivery on the New York Mercantile Exchange traded at \$91.14 per barrel at 7:06 GMT today, down 1.22% for the day, while prices had ranged from \$90.63 to \$92.37 per barrel. The US benchmark lost ~1% last week.

Meanwhile on the ICE in London, November Brent stood at \$97.10 per barrel, down 0.88%, daily prices between a two-year low of \$97.02 and \$97.87 per barrel. The contract's premium to November WTI widened to \$6.60. The European brand dropped ~3.7% last week.

Several key downbeat China gauges weighed on crude, as traders price in a lower demand outlook for the world's second-top oil-consuming economy. Industrial production, which accounts for about half of Chinese GDP and is a major driver for domestic oil consumption, logged 6.9% annual growth, the lowest in almost six year, nosediving after last month's 9.0% rate and falling well-short of expected 8.8%.

Meanwhile, retail sales and fixed asset investments were also recorded lower than expected, adding 11.9% and 16.5%, respectively.

"The major news is the data out of China," Ric Spooner, a chief strategist at CMC Markets in Sydney, said for Bloomberg. "It means potentially another area of moderation in overall oil demand."

China will consume about 11% of all oil this year, according to the International Energy Agency (IEA).

Outlooks

Last week the IEA lowered its forecasts for oil demand growth for this year and 2015 by 150 000 and 100 000, respectively, to 900 000 in 2014 and 1.2m next year.

Meanwhile, Saudi Arabia said it is not planning a cut in output to accommodate a higher global price for crude, dispelling speculation that such a move will come to support prices soon. The country did, however, report a slowdown in production for August, though growing exports from Iraq and Libya more than accounted for it.

OPEC also lowered the projected volume of crude it would market next year, as global demand was seen slowing, supporting IEA's outlook.

"The recent slowdown in demand growth is nothing short of remarkable," the agency said.

IEA's forecast cut comes as a separate US outlook proposed growing supplies, further pressuring crude. The Energy Department's statistics arm, the Energy Information Administration, said oil prices next year will be lower as US crude output reaches a 45-year peak.

"We're in a situation where the demand, supply scenario is fairly weak," Spooner added for Bloomberg. "The market is stripping out a lot of the geopolitical risk premium."

Ukraine

Ukraine was still on the radar, after the EU introduced fresh sanctions against Moscow on Friday, aimed directly at Russian state-owned oil companies. The measures deny companies like Rosneft and

Gazprom Neft access to European capital markets and oil-related technology, significantly limiting their expansion capabilities.

The market was complacent about any immediate negative ramifications on a global scale, though, keeping the risk premium on a minimum level.

The Kremlin said it would respond to the new sanctions.

Meanwhile, the truce between Kiev and pro-Russian rebels was largely holding, though both sides seemed as distant from a peaceful resolution, with separatists calling for complete independence and Kiev even vowing to bring Crimea, the Black Sea peninsula annexed by Russia in March, back to Ukraine.

Technical support and resistance levels

According to Binary Tribune's daily analysis for Monday, West Texas Intermediate October futures' central pivot point is at \$92.63. In case the contract breaches the first resistance level at \$93.31, it will probably continue up to test \$94.34. Should the second key resistance be broken, the US benchmark will most likely attempt to advance to \$95.02.

If the contract manages to breach the first key support at \$91.60, it will probably continue to drop and test \$90.92. With this second key support broken, movement to the downside will probably continue to \$89.89.

Meanwhile, November Brent's central pivot point is projected at \$98.41. The contract will see its first resistance level at \$99.14. If breached, it will probably rise and test \$100.33. In case the second key resistance is broken, the European crude benchmark will probably attempt to advance to \$101.06.

If Brent manages to penetrate the first key support at \$97.22, it will likely continue down to test \$96.49. With the second support broken, downside movement may extend to \$95.30 per barrel.

- Like 1
- Author: <u>Veselin Valchev</u> Veselin is a financial news writer and editor at Binary Tribune, following the commodities spot and reporting on pricing and tendencies on the futures market.



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Legislative Council Follow-up Questions from

March 12, 2015

Follow-Up to Q1

Thank you for your response as to teacher instructional time. However, we have further questions regarding your math, particularly in regard to high school teacher instructional time. Are you saying that high school teachers are teaching every period except lunch every day? This would not seem to be the experience of some of us who have or had children in the high school. There must be free periods and/or time dedicated to preparation, etc. For example, is the Chinese teacher teaching 35 periods a week (40-5)? Can you be more specific as to time spent actually in a classroom teaching?

All teachers teach 5 classes (1.0 FTE including lab science teachers). Dept. Chairs teach 3 classes (.6 FTE/.4 administrative). Other teachers, based on their responsibility, may be reduced at various times with approval.

We have 53 minute classes currently in the schedule (dropping 2 a day) and one class per day gets one longer period in an 8-day rotation including lunch period (64 minutes + 30 minute lunch).

See attachment "teacher's classes"

Newtown school schedules are listed in Table 1 below. There are contractual duties that all teachers must meet during the school day. These duties vary by level, student need, and teacher assignment. By contract, teachers must be provided a lunch period of 30 minutes.

Table 1.				Instructional
				Time
Level	Start Time (a.m.)	End Time (p.m.)	Length of Day	(-30 minutes lunch)
Elementary	9:05	3:37	6 hrs 32 min	6 hrs 2 min
Intermediate	8:05	2:49	6 hrs 44 min	6 hrs 14 min
Middle School	7:20	2:02	6 hrs 42 min	6 hrs 12 min
High School	7:20	2:02	6 hrs 42 min	6 hrs 12 min

The estimated instructional time for teachers at each level was determined by taking the length of the school day and subtracting the 30-minute duty-free lunch for teachers. Using the information from the table above, the district average for teacher instructional minutes would be 6 hours and 10 minutes.

School districts throughout Connecticut have varying school day lengths, schedules (rotating, block, etc.), and school years. Contractual agreements also vary from district to district. Therefore, a comparative state average of a teacher's instructional time by grade level would be inconclusive.

Table 2 details the typical time that full-time teachers (1 FTE) are teaching in their specific content areas. Rotating and block schedules may cause variation but the following numbers are typical. Remember, these figures do not include teacher duties and planning time. If these responsibilities and instructional support time were added to the "Total Instructional Time" column below, the total would equal the numbers shown in Table 1 above.

Table 2

Level	Instructional Periods	Period Length (min)	Total Instructional Time
Elementary	NA	NA	4 hrs 54 min
Intermediate	6	45	4 hrs 30 min
Middle School	4.5/5	53	4 hrs/4 hrs 25 min
High School	5	53	4 hrs 25 min

Follow-up to Q6

Given the answers below, how does this save money?

Focusing on Reed as an example: There is a -.50 in Art; -.50 in Music; and -1.0 in PE.

 Can you explain the mechanics of how a -.50 FTE reduction in Art (for example) has no impact on student services?

Program design does not change. Program contact time with students remains in place. The above mentioned reductions are feasible because there are fewer classes to teach. Example – RIS opened their doors with 40 classroom teachers. A dozen years later we will have 30 classroom teachers for the 2015-2016 school-year. In addition, the final staffing changes may include additional schools as the reductions were earmarked at RIS as placeholders until final class sections are realized.

Art is offered at Reed one period per 6-day cycle at both fifth and sixth grades. Music is offered for two periods per 6-Day cycle - again, for both fifth and sixth grades. Staffing in these two specialty areas is based upon the number of sections that need to be taught, understanding that music is more complicated based upon the mix of chorus, general music class and the complexities of instrumental music - band, orchestra and lessons. Of course, the final determination in scheduling is also contingent upon complying with the requirements in the teacher contract and the demands of the overall schedule. Final staffing changes may result in other decisions, as the reductions were earmarked at Reed as placeholders until final class sections are realized.

This year, 2014-2015, we reduced art by .58 at Reed. We did not reduce music. We were able to absorb this cut because of the reduction of two classroom clusters. The reduction of one additional cluster for the 2015-2016 school-year will allow us to continue to meet the needs of our students, even as we experience reductions in art (.5) and music (.5).

When there are reductions in staffing, teacher assignments are finalized after taking into account the needs of the district, the skill and experience of teachers and seniority. Tenured teachers always have seniority over non-tenured teachers. Teacher compensation is determined by the level of individual teacher salaries as specified by the contract and the percentage of their assignment. If a teacher's assignment is reduced, their compensation is reduced on a percentage basis. Obviously, most teachers are full-time or 1.0, and a few are not. If you're .8 or above you receive full benefits, including medical. If not, your benefits are reduced, and you do not receive BOE supported medical benefits.

Next year because of the proposed cuts in art - elementary, Reed and middle school and music - Reed and middle school we are anticipating that some teachers will need to travel between schools. (This is already done in PE at the elementary level because of a cut in the 2014-2015 budget.) Travel time between schools also needs to be factored into teaching assignments. (contract)

And what specifically will it mean when implementing that from a staff perspective, in terms
of their time and compensation?

No change

The reduction in staff equates to a reduction in dollars. The .5 reduction in art saves \$28,297, .5 in music saves \$28,297 and 1.0 reduction in P.E. saves \$56,594 for a total savings of \$113,188. (see pg. 29 in the budget book)

Follow Up to Q7

Heating Oil

Thanks for your responses to my earlier questions, please see below for follow-up.

From the minutes of the BOE meeting on 9/16/14:

"Waiver of Policy 3-300

MOTION: Mr. Freedman moved that the Board of Education waive Policy 3-300 as it pertains to the purchase of fuel oil for the 2015-16 school year. Such waiver is granted in consideration of the volatile fuel oil market and recognizing that other communities and school districts will be locking into a fixed price for next year when the market seems right. The waiver will allow the Director of Business and Supervisor of Buildings and Grounds, with the approval of the Superintendent of Schools, to exercise an option to extend the current contract, accept

Board of Education

-4-

September 16, 2014

consortium pricing, or to solicit written, verbal or fax quotes for supply and give them the ability to commit to a supplier based on their best judgment of market conditions. Whenever an agreement is reached, it will be emailed to the Board and then presented to the Board at its next regularly scheduled meeting and shall not exceed one year in duration. Mr. Vouros seconded.

Mr. Bienkowski would like to do this soon as the price of oil is at a 26-month low per barrel. Today he found out that production will be lowered. Today the price is \$3.07 per gallon. This would be for the 2015-16 school year.

Motion passes unanimously.

Questions:

- 1) Has an agreement been reached? If so, please provide a copy of that contract. Yes, see contract attached.
- 2) If yes, has the board been presented with this contract? There is no indication of that in the minutes. No, it was not presented at the time of signing the contract however, it was shared with the board members via e-mail dated Saturday October 4, 2014 by Dr. Erardi.

"Today I have locked in our 2015-16 fuel oil at a price of \$2.9900 per gallon with East River Energy for 168,000 gallons. This will equal a cost that is \$25,717 less for oil for next year. East River has provided oil, gasoline and diesel for both the Town and BOE for a number of years. They are located in Guilford, Connecticut." - Ron Bienkowski

- 3) If a contract has been signed, what is the penalty for not purchasing the stipulated number of gallons? In the event that the BOE purchases less than 100% of the contracted gallons during the contracted period, East River reserves the right to (1) extend the contract under the same terms and conditions, (2) have the customer purchase at the contract price the difference between the contract gallons and the actual delivered gallons; East River shall have no obligation to deliver remaining gallons, or (3) terminate the contract. Storage fees or liquidation charges may apply and customer will be responsible for payment of any storage fees or liquidation charges.
- 4) Extending the contract for another year as suggested in your earlier answers would require BOE approval, correct? Yes.

That would mean another year of no cooperation between the BOE and the town to get the best price possible for the taxpayers. What would the rationale be for that approach? It is not our recommendation to extend the contract. This was the response to the question on how we could lower the 2015-16 cost.

5) What is the current price available from the consortium? We haven't been able to get a price from them as we do not believe they have locked in yet for 2015-16.

See additional information attached on how the oil contract works.

Follow-up to Technology Question

For several years we've been discussing smoothing out IT expenses so they don't have such large ups and downs, much like the way we fund smaller capital expenses like fire engines on the town side. Please explain why there is such an increase this year despite those discussions.

In order to smooth out technology equipment expenditures, \$545,307 (0.76% of an approximately 72 million dollar total school budget) would need to be budgeted each year to just replace obsolete equipment. Only \$429,555 are included in the 2015-16 budget request for obsolete equipment replacement, respecting the desire to keep the budget increase minimal. This is \$115,752 less than the projected annual need for obsolescence.

Dollars allocated for equipment (items such as network infrastructure, phones, computers, laptops and projectors) represent the most variable portion of the Technology Department budget. Without any adjustments, our projected needs for the following years would be:

2015-2016	\$428,300
2016-2017	\$722,470
2017-2018	\$443,460
2018-2019	\$287,775
2019-2020	\$1,069,785

This budget projection shows large swings and reflects past funding patterns.

It is a District goal to have the dollars designated for the replacement of obsolete equipment and the investment in new technologies become more consistent across budget years.

The importance of keeping our inventory up-to-date and functioning is not only being driven by our need to prepare our students to be successful in a technology rich world but also further dictated by increased state demands for testing.

With this in mind, the 2015-2016 Technology Department budget request makes an attempt:

- To meet technology needs in the district including those defined by the state.
- To begin the process to even out the spending for technology equipment in the future.

Legislative Council Education Committee Questions

March 12, 2015

Follow up to Questions

1) Can you provide KPI on average instructional time per teacher for each grade, each School, entire district and State average?

(A response will provide during the week)

2) Do you have data describing whether the changeover from independent bus operators has actually saved the town any money?

Yes and this information has been documented throughout our budget book (pgs. 250-258). In 2011-12 when the Owner Operator Contracts where in full effect, the cost of student transportation was \$4,443,994. In addition to this cost, the BOE also incurred department expenses totaling \$106,591 as well as insurance costs of \$60,634. In 2012-13, when the new busing contract took affect the cost of transportation dropped by over 18% to \$3,607,120. The department expenses and insurance dropped to zero resulting in a total savings of about 22% or \$1,004,099. Going into our fourth year of the contract (fiscal 2015-16) the total transportation costs are *still* below the prior contracts combined cost and are expected to result in a savings of \$551,987. Over the five-year term of the contact, the BOE anticipates a total budget savings of more than \$3.5 million dollars.

3) Describe/explain the Minimum Budget Requirement (MBR). Can you provide historical data to date and its impact on the BOE budget/taxpayer burden?

(A response will provide during the week)

4) The Newtown HS student population has increased fewer than 60 students since 2005/6 (1688). However, from 2005/6 to 2010/11, an increase of approximately 15 HS teachers were added. Why has this increased total not been reduced since HS student population has never come close to projections?

Rationale:

In 2010 students earned a minimum of 20 credits to meet graduation requirements. Beginning with the class of 2011, an additional science and an elective credit was added to bring the minimum credit requirement to 22 for all students. For the class of 2018, students must earn a minimum credit requirement of 23, which includes 1 World Language. Students also continue to graduate with credits beyond the minimum expected in order to ensure they are competitive for college.

NHS had a need for new teachers in certain areas even prior to 2011. However, the school did not have the capacity/space to do so. The additional space supported our ability to hire new teachers in order to decrease class size to reasonable numbers and BOE guidelines.

2005-06:

School psychologist

Psychologist added to accommodate a larger population in order to meet the social/emotional/psychological needs of all students. In addition, the school psychologists conduct testing and run PPTs/504 meetings. These continue to require personnel resources as many are complex in nature in a school of this size. This position is part of pupil services.

2006-07:

Bio/Chem

The additional hires in science were made in response to student increased enrollment, to address class size and certification issues, and to accommodate the number of students who take additional credits in science to remain competitive for college. In addition, class size in science/lab courses must be lower than other classes due to safety and OSHA guidelines. Currently, class averages in biology and chemistry are approximately 21 (and cannot exceed 24 due to safety issues).

Further, science staff additions have enabled us to increase our elective offerings (APES, Applied Science Research, Health Science, Public Health) and offer enough AP sections so that few, if any, students are turned away.

Business Education

Business education teacher added to accommodate the needs of students who continued to need elective courses to complete overall elective requirements for graduation. These courses meet the needs of students not only interested in the field but who want to pursue business fields at the college level. NOTE: In 2011/12, we increased credits to 23 for all students, which included a Financial Literacy course.

(.4) Social Studies – (8/22/07 pos. increased to 1.0)

Added position due enrollment in addition about 85% of students take more than the required 3 years of social studies. Currently, in social studies, there are 26 sections of classes over 25 students.

2007-08:

Earth Science

Increasing enrollment and a desire to limit class size, particularly for college prep level classes.

Math

Math position added this year to meet the enrollment needs and to align with recommended class size. Currently, the math department has the highest class size numbers. While 3 credits are minimally required for graduation, 67% of our population takes 4 credits in math to remain competitive for college pursuits. Currently, average class size in math is 28 sections with classes over 25. There are also 11 sections with 28 students or above.

Culinary (.8)

.8 FTE added to accommodate the high interest in this area. One teacher could not handle the growing number of student requests to pursue culinary arts and advanced culinary courses. This a popular field and many students go onto culinary arts institutes and culinary schools as a result. In addition, there is a safety factor in these classes as students are part of an

entrepreneurship, manage the snack shack and Outakes (in the cafetorium), as well as the variety of catering opportunities throughout the school.

2008-09:

Spanish

Position added to maintain class size guidelines and accommodate student requests in Spanish at this time. In addition, students often take more than 2 credits of World Language in order to remain competitive for college. Currently, and with the requirement of World Language, there are 13 sections with classes over 25.

(.4) FLEX Math -(8/28/09 pos. increased to .8)

This position in FLEX was increased to .8 in 2009. The position needed another staff member as FLEX supports struggling students throughout the year. Students are placed in the program for a variety of reasons: failures, return to school after medical leave, etc. The position was added specifically to accommodate students who struggle in math. The other staff member's expertise is in the humanities area.

2009-10:

Physics

The additional hires in science were made in response to student increases in a particular year, to address class size and certification issues, and to accommodate an increase of required science courses from 2 to 3. Currently, the average in physics classes is 18, which is lower than in other departments due to safety concerns.

Social Studies

Added position due enrollment in addition about 85% of students take more than the required 3 years of social studies. Currently, in social studies, there are 26 sections of classes over 25 students.

Mandarin Chinese

This instructor position is part of our NICE exchange with China. Part of the teacher's salary is paid through the Hanban organization so that NHS can offer students the language of Mandarin.

Special Education

The specialized needs of students at NHS have grown. Students with disabilities population and their complex needs have increased. New position added to ensure we could meet the IEP needs of our high school students and maintain reasonable caseloads of students. This included the addition of an in-house critical skills program for students with social/emotional needs.

School Counselor

In order to create a more meaningful freshman experience and effectively manage the transition from middle school to high school, we have created the position of Freshman Counselor with a web of support personnel and practices. The creation of this position allows the Freshman Counselor to more effectively coordinate the transition to the high school while it allows the six other counselors to more effectively manage their caseloads. However with the continuous

increase in enrollment the freshman counselor caseload now exceed 400 students. According to NEASC recommendation the Counselor/Counselee Ratio for a counselor should not to exceed 300:1. NEASC Policy Handbook

In addition, all students are expected (through the State mandate) to complete a Student Success Plan as they move through their 4 years of high school. Counselors have direct oversight in working with students throughout this process (goal setting, interest inventory, college and career exploration)

2010-11

Biology

The additional hires in science were made in response to student increases in a particular year, to address class size and certification issues, and to accommodate number of students who take additional credits in science to remain competitive for college. Currently, class averages in biology and chemistry are approximately 21 (and cannot exceed 24 due to safety issues). Science additions have enabled us to increase our elective offerings (APES, Applied Science Research, Health Science, Public Health) and offer enough AP sections so that few, if any, students are turned away.

(.4) Latin – (8/21/14 pos. reduced to .2)

Latin teacher to accommodate the language needs of students, especially as Latin is a challenging course, often desired by students who want to improve their SAT scores. This course adds to the variety of world language opportunities afforded to NHS students to maintain their competitive edge with respect to college acceptance.

2011-12:

Integrated Earth Science

Increasing enrollment and a desire to limit class size, particularly for CPB classes.

Social Studies

Added position due to enrollment and number of high school students taking more than the required 3 years of social studies. Currently, in social studies, there are 26 sections of classes over 25 students.

2012-13:

No new positions added

2013-14:

No new positions added

2014-15:

(.5) Special Ed. Transition Program

A .5 special education teacher was added for this year's budget to meet the increasing needs for special education transition programming. With the increase in students who are identified for services, the need to address IDEA mandated transition services has increased.

Decreased:

We decreased at the high school in art by 1.20 and Tech Ed by .80 during this time frame.

5) Even with reductions possible by the BOF (Dental, Transportation, etc) there is still likely to be an increase in spending/budget despite an estimated decrease of almost 200 students. Can you explain (perhaps again) the relationship between enrollment, staffing and budget? Should the community at some point expect a reduction in budget given the predicted declines or do any potential saving get turned into new programing or merely offset contractual increases (or something else)?

The marker which is used as a placeholder for *level services* generally falls into the 2.5% to 3.0% range. *Level services* would be defined as what additional dollars would be needed to play forward existing program and student opportunity without any changes from one year to the next. In nearly all cases dollar increases are driven by contracts and insurance. Therefore, if you look to Newtown a 3% *level services* adjustment would have resulted in an approximate \$2.1 million dollar increase in needed new spending. The proposed operational plan being reviewed by the Legislative Council arrives with endorsement from the Board of Finance with a requested \$242,642 for new spending. The delta between the \$2.1 and the actual proposed was realized in part with a reduction in force from our declining enrollment. In addition, no new spending for insurance and an early incentive retirement plan were all drivers to the good for the bottom line.

- 6) The budget details staffing reductions of 13.17 FTE (\$331,389).
 - How much of the 13.17 is directly attributable to a decrease in the student population?

All of the certified staff reductions (with the exception of staff members who work with special needs youngsters) are directly connected to declining enrollment. Therefore 7.3 certified positions are directly connected to enrollment.

- Focusing on Reed as an example: There is a -.50 in Art; -.50 in Music; and -1.0 in PE.
 - o Can you explain the mechanics of how a -.50 FTE reduction in Art (for example) has no impact on student services?

Program design does not change. Program contact time with students remains in place. The above mentioned reductions are feasible because there are fewer classes to teach. Example – RIS opened their doors with 40 classroom teachers. A dozen years later we will have 30 classroom teachers for the 2015-2016 school -year. In addition, the final staffing changes may include additional schools as the reductions were earmarked at RIS as placeholders until final class sections are realized.

 And what specifically will it mean when implementing that from a staff perspective, in terms of their time and compensation?

No change

• Within the 13.17 are -8.20 FTE Spec Ed Para-Educators. Can you explain the rationale for no longer needing these positions?

Restructuring special education supports Pk-8 and expanding the use of various coteaching models across the district is projected to reduce the need for para

supports. However, it is important to note that the need for resources may fluctuate at any time due to various factors such as the possibility of new students entering the district or if additional students become eligible for special education supports.

7) Heating Oil Purchases

• There is the possibility of real budget savings without impacting services if the BOE is able to purchase heating oil at the rate the town secured. Can you provide us with the cost for not purchasing oil from the contract negotiated by the BOE? That is, can you buy out of the already negotiated contract with the oil company? It may also be possible to reduce the amount of oil purchased under the BOE contract and buy some at the higher rate and some at the town's lower rate (if this leads to a reduced fee or no fee for not buying the full amount). In short—what are our options and costs related to buying oil (all or some) at the lower rate negotiated by the town.

The oil contract is a fixed quantity contract with no variability in cost or quantity. Our experience with the Town last year when they didn't use all the contracted gallons was that we either had to take the gallons (with no place to put it) or to liquidate it at \$1.0754 per gallon. Essentially, this amount per gallon was paid for to get out of the remaining contact obligation.

We have contacted East River and the current option we are exploring would be to extend our contract an additional year (through 2016-17) and then cost average it down for the 2015-16 year. In other words, a lower cost for 2015-16 would result, but this would require and additional year commitment.

• Also, what process can be put in place where we can prevent the BOE from paying higher rates than the town (and vice versa)? Would both side benefit by a lower rates associated with a higher volume purchase for instance?

In September 2015, crude oil was at its lowest price in over 26-months. At that time, the BOE began to explore the possibility of locking into a rate that was lower than the current rate of \$3.09 per gallon. The BOE conferred with Town officials about moving forward together at the rate of \$2.99 as there was no short-term forecast indicating that the market would drop any further. Mr. Hurley declined stating that he would wait until February and bid with CROG. With the anticipation of potentially higher energy costs (remember, this was a 26 month low) and with the heating season quickly approaching, the BOE decided to lock into a contract at \$2.99. History has previously demonstrated that the price of oil has never declined going into a heating season. This has been an unprecedented and certainly an unpredictable drop in the price of oil. (see the attached information that the Board relied upon before committing to a contract)

Legislative Council Education Committee Questions March 12, 2015

Follow up to Questions 1 and 3

1) Can you provide KPI on average instructional time per teacher for each grade, each School, entire district and State average?

Newtown school schedules are listed in Table 1 below. There are contractual duties that all teachers must meet during the school day. These duties vary by level, student need, and teacher assignment. By contract, teachers must be provided a lunch period of 30 minutes.

Table 1.				Instructional
				Time
Level	Start Time (a.m.)	End Time (p.m.)	Length of Day	(-30 minutes lunch)
Elementary	9:05	3:37	6 hrs 32 min	6 hrs 2 min
Intermediate	8:05	2:49	6 hrs 44 min	6 hrs 14 min
Middle School	7:20	2:02	6 hrs 42 min	6 hrs 12 min
High School	7:20	2:02	6 hrs 42 min	6 hrs 12 min

The estimated instructional time for teachers at each level was determined by taking the length of the school day and subtracting the 30-minute duty-free lunch for teachers. Using the information from the table above, the district average for teacher instructional minutes would be 6 hours and 10 minutes.

School districts throughout Connecticut have varying school day lengths, schedules (rotating, block, etc.), and school years. Contractual agreements also vary from district to district. Therefore, a comparative state average of a teacher's instructional time by grade level would be inconclusive.

3) Describe/explain the Minimum Budget Requirement (MBR). Can you provide historical data to date and its impact on the BOE budget/taxpayer burden?

MBR Determination

2014-15 Base MBR

The 2014-15 base MBR equals the greater of the 2013-14 MBR or the 2013-14 budgeted appropriation(s) to the board of education, plus any increase in Education Cost Sharing (ECS) aid in 2014-15 relative to 2013-14.

State law requires towns to spend 100% pf their ECS aid for educational purposes and to spend the funds only on the authority of the town's local or regional board of education. In addition, the towns are barred from using increases in ECS funding to supplant local education funding (CGS § 10-262i(c)).

In 2005, the General Assembly made the prohibition against supplanting local education funding more explicit and enacting a minimum budget requirement (MBR) (CGS § 10-262i(d)). The first MBR required any town that received an increase in ECS funding over the amount it received in the previous year to have a budgeted education appropriation that at least equaled its appropriation for the education in the previous year plus 100% of the ECS increase (PA 05-245). The effect of the current MBR is to prohibit towns from reducing education budgets. By law, the penalty for failing to meet the MBR is a reduction on the town's ECS grant for the subsequent fiscal year equal to twice the amount of the shortfall (CGS § 10-262i(f)). See chart below

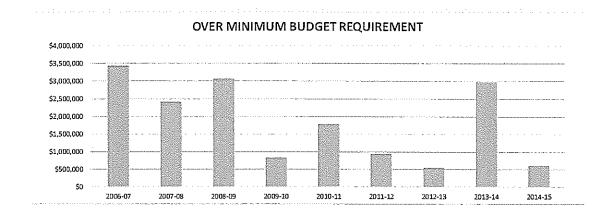
Reduction to MBR

Under certain circumstances, legislation provides the town with the potential to reduce the MBR. If a district's October 2013 resident student count is less than the October 2012 count, its MBR may be reduced by \$3,000 for each student count. However, the maximum reduction under this provision cannot exceed one-half of 1 percent of the greater of the 2013-14 MBR or the 2013-14 budgeted appropriation(s) to the board of education.

MINIMUM BUDGET REQUIREMENTS

	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	<u>2014-15</u>
PRIOR YEAR'S BUDGET REQUIRED INCREASE/ALLOWED DECREASE MINIMUM BUDGET REQUIREMENT	\$56,938,770 \$10,648 \$56,949,418	\$60,387,154 \$85,463 \$60,472,617	\$62,885,158 \$77,612 \$62,962,770	\$66,031,044 ' (\$1,156,366) \$64,874,678	\$66,031,044 (\$614,836) \$65,416,20\$	\$67,194,734 (\$167,550) \$67,027,184	\$67,971,427 (\$154,860) \$67,816,567	\$68,355,794 (\$294,163) \$68,061,631	\$71,045,304 (\$299,953) \$70,745,351
CURRENT YEAR'S BUDGET OVER MINIMUM BUDGET REQUIREMENT	\$60,387,154 \$3,437,736	\$62,885,158 \$2,412,541	\$66,031,044 \$3,068,274	\$65,700,092 \$825,414	\$67,194,734 \$1,778,526	\$67,971,427 \$944,243	\$68,355,794 \$539,227	\$71,045,304 \$2,983,673	\$70,745,351 \$71,345,304 \$599,953

^{* 2010-11&#}x27;S ALLOWABLE DECREASE IS BASED ON 2008-09 BUDGET RATHER THAN PRIOR YEAR'S



Legislative Council Follow-up Questions from

March 23rd 2015

1) How many students graduated from NHS (Class of 2013, 2014) with greater than 23 credits (credit increase moved from 22 to 23 - pending legislation requires an additional increase)?
See table below

NHS Student Graduates 23 or Greater Credits 2010-2014

Grad Year	Graduates	Students w/23 or more total credits	Percentage of Grad Class w/23 or more credits
2010	418	317	75.80%
2011	425	355	83.50%
2012	398	350	87,90%
2013	454	407	89.60%
2014	415	374	90.10%

The historical data serves as baseline information regarding graduation trends and accrued credits. The recently discussed legislation was a factor in moving the present credit need to 23 over four years. The belief moving forward is that students are not scheduled to meet the lowest number of credits possible to graduate; thus, the continued conversation around approximately 50% of the student body taking a minimum of one additional class driven by the heightened graduation standard.

Example = 800 students divided by 25 (acceptable class size) = 32 new classes (sections) divided by 5 (average teaching load) impacts a need of 6.4 staff members.

Other driving factors around staffing needs at NHS pertain to the number of students taking a class for a second time (failure first time / repeating class the following year) and the number of students who are programmed beyond a traditional four year average.

2) Over the past five years, have we increased staffing for pupil personnel services at Newtown High School?

The present proposed plan includes an additional guidance counselor (1.0 FTE) and special education supervisor (1FTE). Historical data within the past six years includes an additional 2.0 FTE guidance counselors which was driven by the NEASC accreditation decennial study.

Our challenges become more complex not only due to factors from 12/14 but also in response to the *Report of the Child Advocate* released last Fall. State-wide, special education numbers reported in the Oct. 1st count have <u>increased</u> by 2,508 students. Currently, our special education population is in line with this increase. In this year alone, the October 1st count of 474 students has *increased* to the current number of 516 students identified as of today, March 24th.

3) A copy of the requested document which outlined administrative ratios to student index will be forwarded for your review. See table below

			Asst						Administrators		APs
		Head	Head	Assistant	Dean of	House	Total FTE		Average#of	Total	Average #
School Name	Principal						Administrators	Enrollment	Students	FTEAP	ofStudents
Granby Memorial High School	1			2			3.0	759	253.00	2.0	379.50
Brookfield High School	1			2			3.0	918	306.00	2.0	459.00
New Fairfield High School	1			2			3.0	1010	336.67	2.0	505.00
Guilford High School	1			1	2		3.0	1070	356.67	3.0	356.67
Avon High School	1			2			3.0	1083	361.00	2.0	541.50
Masuk High School	1			2			3.0	1227	409.00	2.0	613.50
Daniel Hand High School	1			2			3.0	1255	418.33	2.0	627.50
Pomperaug Regional High School	1			2			3.0	1259	419.67	2.0	629.50
Farmington High School	1			2			3.0	1322	440.67	2.0	661.00
South Windsor High School	1			3			4.0	1409	352-25	3.0	469.67
Fairfield Ward High School		1			3	3	5.5	1418	257.82	6.0	236.33
Hall High School	1			3			4.0	1475	368.75	3.0	491.67
Cheshire High School	1			3			4.0	1514	378.50	3.0	504.67
Conard High School	1			3			4.0	1542	385.50	3.0	514.00
Fairfield Ludlowe High School		1			3	3	5-5	1552	282.18	6.0	258.67
Simsbury High School	1			3			4.0	1559	389.75	3.0	519.67
Amity Regional High School	1			3	e	GOVENNONE (THE REPORTED	4.0	1621	405.25	3.0	540.33
Newtown High School	1			3			4.0	1760	440.00	3.0	586.67
Trumbull High School	1			3	1		4-5	2195	487.78	4.0	548.75
Glastonbury High School	1			4			5.0	2239	447.80	4.0	559.75
Greenwich High School		1	1		1	5	7.5	2678	357.07	7.0	382.57

- 4) A copy of the All-Star February ridership will be forward to you for your review. See attached
- 5) Where does the health coordinator's salary appear in the proposed plan? The table below shows the allocation of salary.

BUDGET							
PAGE	<u>LOCATION</u>	<u>DEPARTMENT</u>	<u>OBJECT</u>	<u>STIPEND</u>	<u>F.T.E.</u>	<u>OPEN*</u>	<u>TOTAL</u>
56	HAWLEY	CLASSROOM	SPECIALIST	\$625	0.10	\$5,659	\$6,284
68	SANDY HOOK	CLASSROOM	SPECIALIST	\$625	0.10	\$5,659	\$6,284
79	MIDDLE GATE	CLASSROOM	SPECIALIST	\$625	0.10	\$5,659	\$6,284
92	HEAD O'MEADOW	CLASSROOM	SPECIALIST	\$625	0.10	\$5,659	\$6,284
103	REED	HEALTH ED.	SPECIALIST	\$625	0.10	\$5,659	\$6,284
121	MIDDLE SCHOOL	HEALTH ED.	TEACHER		0.20	\$11,319	\$11,319
121			SPECIALIST	\$938	0.15	\$8,489	\$9,427
145	HIGH SCHOOL	HEALTH ED.	SPECIALIST	\$938	0.15	\$8,489	\$9,427
				\$5,001	1.00	\$56,592	\$61,593

^{*} OPEN POSITION BUDGETED AT MASTERS STEP 4.

6) What does the \$73k of added dollars represent within the pupil services (special education) proposed plan (page 267)?

The additional \$73k can be broken out as follows:

- \$21,400 required for new legislation requiring additional training of special education teachers working with students with dyslexia; (pg.176)
- \$21,770 incremental cost increase to replace the department chair; (pgs. 29 & 176)
- \$18,501 needed for summer special ed supervisor; (pgs. 29 & 176)
- \$9,137 contractual increase for director and supervisor; (pg. 176)
- \$2,535 net total to increase clerical hours and decrease overtime hours; (pg. 176).

7) Can explicit information be sent regarding enrollment that clarifies the present October 1st and most recent student count?

The October 1st enrollment numbers were used throughout the budget process and published throughout the budget book. These numbers are pulled directly from Power School and are made up of Pre-K through 12th grade, in-district students.

The enrollment numbers that were presented on a hand-out titled "2015/16 Changes in Enrollment" included the <u>out-of-district</u> children and was as of January 30, 2015, not October 1st. If we want to compare the January 30th number to the October 1st number, we have to reduce the 4,782 by the out-of-district children, which equal 33 and we come up with 4,749. This is the number that should have been used for the January 30th presentation.

The table below illustrates how the enrollment frequently changes throughout the year.

	Oct 1st	Oct 31st	Nov.	Dec.	
K-12	4,770	4,776	4,771	4,774	4,782
Out-of-town	-32	-33	-33	-31	-33
Total In-district	4,738	4,743	4,738	4,743	4,749

8) What are the resident student counts by year used to calculate the associated increase/reduction toward Minimum Budget Requirement?

The resident student counts used to calculate the MBR are listed in the table below.

<u> 2004-05</u>	<u> 2005-06</u>	<u>2006-07</u>	<u>2007-08</u>	<u> 2008-09</u>	<u> 2009-10</u>	2010-11	<u> 2011-12</u>	<u> 2012-13</u>
5,510	5,665	5,697	5,661	5,623	5,517	5,472	5,323	5.168



October 1, 2014

Mr. Ron Bienkowski **Business Manager** Newtown Board of Education 3 Primrose Street Newtown, CT 06470

Transmitted via Electronic Mail

Dear Mr. Bienkowski:

Hast River Energy is pleased to confirm the following fixed price contract which has already been processed, effective this date, as per the electronic mail exchange between Ron Blenkowski of the Newtown Board of Education and Jesse Herzog of East River Energy

East River Energy shall supply and the Newtown Board of Education shall purchase the following as listed below.

Product	Contract Period	Contract Gallons	Fixed Price Per Gallon Including Taxes
#2 Heating Oil	7/1/2015-6/30/2016	168,000	\$2.9900

The fixed price above includes L.U.S.T. of \$0.0010 per gallon, the Federal Spill Fund Recovery Tax of \$0.0019 per gallon and NORA of \$0.0020 per gallon.

East River Energy's payment terms are net 25 days.

Please sign below where indicated, along with Attachment A, and return to my attention immediately.

Thank you for your valued business. I look forward to continuing our mutually rewarding relationship.

Sincerely,

Accepted by:

Jesse M. Herzog Vice President

Mr. Ron Bienkowski Dated: 10/11/14

JMH:tcb

Your Energy Partner 401 Soundview Road · P.O. Box 388 · Guilford, CT 06437-0388 203.453.1200 · 800.336.3762 · FAX; 203,453.3899 www.eastriverenerav.com Est. 1984



Attachment A

The price contained and offered in this contract is based upon the sale of the quantity of contract gallons as stated in the specifications. In the event that the customer exceeds 100% of the contract gallons during the contract period, Bast River Energy reserves the right to (1) extend the contract under the same terms and conditions, or (2) change the contract price to the Oil Price Daily New Haven Harbor Average plus \$0.15 per gallon. In the event that the customer purchases less than 100% of the contract gallons during the contract period, East River Energy reserves the right to (1) extend the contract under the same terms and conditions, (2) have the customer purchase at the contract price the difference between the contract gallons and the actual delivered gallons; East River Energy shall have no obligation to deliver remaining gallons, or (3) terminate the contract. Storage fees or liquidation charges may apply and customer will be responsible for payment of any storage fees or liquidation charges. East River Energy will monitor consumption on a monthly basis. East River Energy reserves the right to allocate committed gallons on a prorate basis over the term of this contract. Should customer request a #1 Diesel (Kerosene) blend, the #1 Diesel Puel gallons delivered will be involced based on the Oil Price Daily New Haven Harbor Kerosene Average, plus \$0.20 per gallon. Should customer request a Performance Bond, cost is \$15.00 per thousand with a minimum charge of \$100.00.

Customer agrees to the terms of sale as set forth in this contract. If customer fails to pay within the terms of contract, customer agrees that East River Energy has the right to charge, and customer agrees to pay, a finance charge of 1.5% per month on any unpaid balance. If East River Energy hires an attorney or collection agency to collect the amounts the customer owas, customer agrees to pay any costs and expenses, including reasonable attorneys' fees and/or collection agency fees, incurred in the collection of the account or in enforcing the contract. In addition, any credit balance remaining on an account will be applied to the following year's purchases. Please note that any change in State or Federal taxes/fees over the course of the contract period will be passed down to the customer and customer will be responsible for payment on such new tax/fee rate.

East River Energy reserves the right to refuse to deliver to any tank, which, in its sole discretion, is deemed unsafe. Deliverles will resume once the problem is corrected. In the eyent a "run-out" occurs at a "will-call" tank, East River Energy reserves the right to levy a surcharge commensurate to the cost of providing immediate delivery, if one is requested. In the event a driver is re-routed due to a will call customer not taking the full load as ordered, Bast River Energy reserves the right to levy a delivery charge. Customer acknowledges that all tanks and piping are in good condition and meet all State and Federal regulations and specifications. Product samples, when requested, must come directly off of the truck before delivery is made. East River Energy is not obligated to deliver to any tanks or locations other than what is stated in the contract and/or bid specifications. In addition, All Bast River Energy-reserves the right-to-lavy-a field-surcharge. East River Energy does not provide assurances for fuel which the customer stores in their tanks, or the condition of their tank, leakage or environmental contamination. This is including but not limited to spillage and inaccuracy of fuel ordering. Customer is responsible to notify East River Energy if any tank is replaced, eliminated, or if there is construction work around a tank location. These changes could affect scheduled delivery times, hose lengths, and fittings required to make the delivery. Please have your maintenance personnel keep drivoways, pathways and fills clear of ice and snow. This ensures ability of timely delivery and personal safety of our drivers. Demurrage will be assessed if a delivery is delayed at your location by circumstances beyond our control, and/or if our driver finds it necessary to clear ice or snow in order to deliver fuel to your tank(s). Customer is responsible to pay any demurrage, delivery or fuel surcharges assessed during the contract period.

Publication: OPIS publications including the Oli Price Daily are copyrighted documents and therefore are not to be transmitted by East River Energy to the Customer by law. These publications change daily and it is the customer's responsibility to validate posted prices. The posting utilized will be most closely reflective of the product actually being delivered.

Force Majeure: East River Energy shall not be liable to the customer for any losses or damages to that customer in the event East River Energy is unable to fulfill its obligations under this agreement due to acts of God, fire, flood, war or any other causes beyond its control.

Received by: Thoy Trientowski Dated: 10/1/14

Your Energy Partner

401 Soundview Road · P.O. Box 388 · Guilford, CT 06437-0388 203,453,1200 · 800,336,3762 · FAX; 203,453,3899

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Est. 1984

Last Name	First	FTE	Periods	Position
Allegretto	Tara	1	4	SCIENCE
Bachman	George	1.	5	TEACHER
Barry	Joanna	1	5	TEACHER
Battisti	Laura	1	5	TEACHER
Baumgartner	Karolyn	1	4	SCIENCE
Berechid	Bridget	1	4	SCIENCE
Bisson	Brian	0.5	2.5	TEACHER
Boa	Alixandra	1	5	TEACHER
Brainard	Cate	1	5	TEACHER
Brant	Sara	1	0.75	GUIDCONS
Brant	Tom	1		PSYCH
Bremer	Kathleen	1	5	TEACHER
Cacioppo	Melissa	1	5	TEACHER
Caffrey	Alysia	1	5	TEACHER
Cambareri	Virginia	1	5	TEACHER
Canfield	Christian	1	3	DPT CHAIR
Carley	Chris	1	4	SCIENCE
Carpenter	Lisa	1	5	TEACHER
Carroll	Megan	1	5	TEACHER
Childs	Matt	1	3	DPT CHAIR
Chiucarello	Larry	1	5	TEACHER
Cotroneo	Tiffany	1		LIBRARY
Croce	Deidre	1	0.75	GUIDCONS
Davey	Kathleen	1	5	TEACHER
Davidson	Jennifer	1	5	TEACHER
Deeb	Amy	1	5	TEACHER
DeFeo	David	1	5	TEACHER
DeJulio	Timothy	1	4	SCIENCE
Dellasala	Jennifer	1	5	TEACHER
Diaz	Joanna	1	5	TEACHER
Dietter	Candice	1	3	DPT CHAIR
Dimoulas	Katherine	1	5	TEACHER
Dyer	Michael	1	4	SCIENCE
Earle	Sherry	1	5	TEACHER
Eckhardt	Kurt	1	4	BAND
Edwards	Jason	1	5	TEACHER
Ekman	Eric	1	4	SCIENCE
English	Jan	1	0.75	GUIDCONS
English	Kristin	1	5	TEACHER
Famiglietti	Tegan	0.5	2.5	SPEECH
Ferrier	Jason	1	5	TEACHER
Filmer	Janet	1	5	TEACHER
Flannery	Alison	1	5	TEACHER
Foss	David	1	5	TEACHER
Franklin	Gary	1	5	TEACHER
Gabriel	Janice	0.3	1.5	TEACHER

Gacso	Stephanie	1	5	TEACHER
Gendreau	Robert	1	5	TEACHER
George	Steven	1	5	TEACHER
Georgina	Fawn	1	4	SCIENCE
Giacin	Richard	1	5	TEACHER
Gonski	Jill	1	5	TEACHER
Greenfield	Paula	1	3	DPT CHAIR
Hall	Eugene	1	5	TEACHER
Hanna	Elizabeth	1	5	TEACHER
Boyles	Melissa	0.8	4	TEACHER
Harrison	Trent	1	4	SCIENCE
Hiscavich	Michelle	1	1	MUSIC DIREC
Hoag	Jennifer	1		PSYCH
Hoagland	Lori	1	5	TEACHER
Holst-Grubbe	Erik	1	3	DPT CHAIR
Huettner	Jennifer	1.2	6	TEACHER
Kapitan	Lisa	1	0.75	GUIDCONS
Kaplan	Jacqui	.1	5	TEACHER
Kelso	Kristopher	1	4	TEACHER (NEASC)
Kenney	Kateri	1	4	SCIENCE
Kenney	Marc	1	5	TEACHER
Kenny	Jamie	1	5	TEACHER
Kiely	Randi	1	5	TEACHER
Kimball	Colleen	1	5	TEACHER
Kuroski	Tom	1	4	SCIENCE
Lee	Christopher	1	5	TEACHER
Lima	Tressa	1	5	TEACHER
Linfante	Elizabeth	1	4	SCIENCE
Lombardo		1	5	TEACHER
Lowell	Cheryl Kim	1	4	SCIENCE
	Richard	1	5	
Lye				TEACHER
Malary	Steve	1	4	SCIENCE
Manfredonia	Jeannette	1	4	SCIENCE
Manos	Charlotte	1	5	TEACHER
Marks	Abi	1	3	DPT CHAIR
Marti	Lauren	1	0.75	GUICONS
Matson	Jane	1	4	CHORAL
McConnell	Susan	1	4	SCIENCE
McLean	Laura	1	5	TEACHER
Mendes	Ana	1	0.75	GUIDCONS
Merritt	Doreen	1	4	SCIENCE
Metz	Jessica	1	5	TEACHER
Metz	Tony	1	5	TEACHER
Meyer	Lisa	1	5	TEACHER
Monroe	Ellen	1	5	TEACHER
Murphy	Kelly	1	5	TEACHER
Neumeyer	Brian	1	5	TEACHER

Nichols	Bret	1	0.75	GUIDCONS
Nicholson	Darryl	1	4	SCIENCE
Obloj	Edward	1	5	TEACHER
O'Callaghan	Margaret	1	5	TEACHER
O'Connell	Jeremy	1	5	TEACHER
Oliveri	Danielle	1	5	TEACHER
Ornaf	Mike	0.6	3	TEACHER
Ostar	Cathy	1		GUIDDIR
Parsons	Sayward	1	5	TEACHER
Parvis	Martha	1	5	TEACHER
Pattison	Robert	1	5	TEACHER
Pelligra	Carol	1	5	TEACHER
Pescarmona	Tom	1	5	TEACHER
Pickering	Debbie	1	5	TEACHER
Raccio	Keristen	1	5	TEACHER
Ramsey	Stephanie	1	4	SCIENCE
Reichin	Lisa	1	5	TEACHER
Richardson	Daria	1	5	TEACHER
Rovello	Jim	1	5	TEACHER
Russell	Douglas	1	5	TEACHER
Saladin	Lawrence	1	5	TEACHER
Sargent	Laura	1	5	TEACHER
Sheen	Vivian	1	5	TEACHER
Sheridan	Lisa	0.8	4	TEACHER
Sherman	Karen	1	3	DPT CHAIR
Simon	Gregg	1		ATHDIR
Skolas	Carol	1	5	TEACHER
Stamm	Staci	1	5	TEACHER
Strait	Carl	1	5	TEACHER
Swanhall	Marty	1	4	SCIENCE
Swann	Jolene	1	5	TEACHER
Swift	Kathy	1	5	TEACHER
Sykes	Linda	1	5	TEACHER
Tallcouch _	Tim	1	4	SCIENCE
Tenney	Brian	1	5	TEACHER
Thomas	Jacob	1	5	TEACHER
Thornton	Dimitri	1		PSYCH
Tierney	Shawn	1	5	TEACHER
Toby	Michelle	1	5	TEACHER
Tolson	Jeffrey	1	0.75	GUIDCONS
Torrance	Melissa	1	4	SCIENCE
Tyler	Suzanne	1		SOCWKR
Vega	Nicole	1	5	TEACHER
Violette	Kristin	1	5	TEACHER
Ward-deLeon	Elizabeth	1	5	TEACHER
Zandonella	Liza	1		LIBRARY
Zhang	Amanda	1	5	TEACHER

Zigmont	Melissa	1	5	TEACHER
Zukowski	Tammy	1	5	TEACHER
Zuvanich	Sandra	1	5	TEACHER

Days	Period Length
Days	153 53 Minutes
Ext. Adv Days	8 51 Minutes
Conferences	4 42 Minutes
PD	9 42 Minutes
Exams	8 42 Minutes
Thanksgiving	1 42 Minutes
	183

The way an oil contract works is once the consumer "locks-in" on a price and signs a contract for the amount of gallons needed, the oil company will buy an oil futures contract on that day based on that price. The oil company then pays 60% or more for the contract (to New Haven Harbor) to guarantee that the oil will be delivered. Once the oil is delivered, the oil company then pays a storage fee to New Haven Harbor. The only flexibility in the total cost in in the delivery price.

The cost to rescind our contract would be \$1.80 per contracted gallon. At 168,000 gallons, the BOE would have to pay \$302,400 and have nothing to show for it. If we could find oil at \$1.00 per gallon, it would be worth-while to do so, but a highly unlikely scenario. (An ultimate savings of about \$31,920 or \$0.19 per gallon).

The Town would not have benefited from the BOE's gallons, as they were part of a much larger consortium (CROG) anyway. At our purchasing level, quantity does not necessarily influence the cost. The only component where the price can be lowered is on the delivery price, not the actual cost of the oil. Looking at the current futures market on various price curves, the price today would be somewhere between \$2.03 - \$2.15 per gallon.

The Town decided to join the consortium and let CROG go out to bid for them. Had the BOE waited until February to lock in, it is possible that we could have taken advantage of the consortium pricing but history has proven that it's not always to our benefit to wait. In 2014-15 BOE paid \$3.0949 for oil and consortium price was \$3.17. In 2010-11 & 2011-12 BOE's price was lower than the consortium and in 2012-13 & 2013-14 consortium was lower than the BOE. At the time of our lock-in (for fiscal 2015-16) oil prices were at a 26-month low and all market indicators were suggesting to lock-in before the heating season began as oil prices typically rise during this time.

3/19/15 RB

						THE WILL WILL
BUS	SCHOOL	AM/PM	SCHOOL	AM/PM	SCHOOL	AM/PM
1	HS/MS	41/38	Reed	22 / 19	Sandy Hook	52 / 42
2	HS/MS	41/31	Reed	14 / 11	Sandy Hook	23 / 30
3	HS/MS	35 / 38	Reed	23 / 22	Sandy Hook	27 / 27
4	HS/MS	44 / 33	Reed	22 / 15	Sandy Hook	24 / 27
5	HS/MS	30 / 24	Reed	22 / 24	Sandy Hook	24 / 20
6	HS/MS	57 / 41	Reed	16 / 20	Middlegate	32 / 35
7	HS/MS	22 / 22	St. Rose	22 / 15	Middlegate	32 / 30
8	HS/MS	25 / 30	Reed	19 / 21	Hawley	29 / 29
9	HS/MS	35 / 28	Reed / St Rose	22 / 23	Hawley	40 / 37
10	HS/MS	38 / 38	Reed	12/014	Hawley	22 / 23
11	HS/MS	27 / 31	Reed	15 / 13	Hawley	13 / 15
12	HS/MS	33 / 30	Reed	20 / 21	Head O'Meadow	17 / 14
13	HS/MS	21 / 27	Reed	11 / 014	Head O'Meadow	26 / 27
14	HS/MS	28 / 29	Reed	16 / 17	Head O'Meadow	32 / 25
15	HS/MS	31/28	Reed	8 / 009	Head O'Meadow	30 / 30
16	HS/MS	24 / 30	Reed	18 / 20	Head O'Meadow	35 / 41
17	HS/MS	20 / 20	Reed	6/013	Head O'Meadow	24 / 20
18	HS/MS	19 / 25	Reed	15 / 24	Middlegate	24 / 24
19	HS/MS	35 / 33	Reed	21 / 21	Middlegate	49 / 46
20	HS/MS	37 / 33	Reed	21 / 22	Middlegate	30 / 29
21	HS/MS	39 / 40	Reed	14 / 13	Sandy Hook	25 / 26
23	HS/MS	32 / 37	Reed	13 / 17	Middlegate	29/31
24	HS/MS	24 / 28	Reed	28 / 28	Middlegate	21/20
25	HS/MS	31/30	Reed / St Rose	27 / 30	Middlegate	16 / 15
26	HS/MS	22 / 35	St Rose (AM)	9	Sandy Hook	48 / 37
27	HS/MS	38 / 35	Fraser AM,NYA PM	3/019	Middlegate	30 / 27
28	HS/MS	31 / 28	HAT (PM)	11	Middlegate	29/27
30	HS/MS	34 / 35	Reed	10 / 009	Head O'Meadow	43 / 39
31	HS/MS	33 / 31			Dnby Mag	17 / 11
32	HS/MS	37 / 32	St Rose (AM)	10	Head O'Meadow	21 / 22
33	HS/MS	30 / 27	Reed	6/011	Sandy Hook	37 / 35
34	HS/MS	26/24	Reed / St Rose	27 / 29	Sandy Hook	21 / 24
35	HS/MS	16 / 16	Reed / St Rose	17 / 19	Hawley	22 / 24
36	HS/MS	16 / 26	Reed / St Rose	14 / 12	Hawley	16 / 16
37	HS/MS	30/25	Reed	16/15	Hawley	28/26
38	HS/MS	22 / 24	Reed	8 / 008	Sandy Hook	18 / 17
39	HS/MS	25 / 24	Reed	13 / 17	Hawley	19 / 16
40	HS/MS	8 / 008	Reed	18 / 19	Hawley	20 / 20
41	HS/MS	33 / 25	St Rose	6 / 025		
42	HS/MS	17 / 21	St Rose	10 / 022		
43	HS/MS	16 / 21	St Rose	13 / 14		
	110 /2 40	1 40 / 45	1 0. 5	40 /40		No. 10 Control of the

St Rose

19 / 13

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44

HS/MS

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Oil and other commodity prices have recently been dropping. Is this good news, or bad?

Trend in Commodity Prices Since January 2011

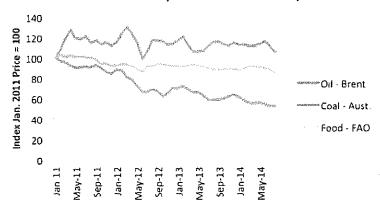


Figure 1 Trend in Commodity Prices since January 2011 Brent spot oil price from EIA. Australian Coal from World Bank Prink Sheet; Food from UN's FAO

I would argue that falling commodity prices are bad news. It likely means that the debt bubble which has been holding up the world economy for a very long-since World War II, at least-is failing to expand sufficiently. If the debt bubble collapses, we will be in huge difficulty.

Many people have the impression that falling oil prices mean that the cost of production is falling, and thus that the feared 'peak oil' is far in the distance. This is not the correct interpretation, especially when many types of commodities are decreasing in price at the same time. When prices are set in a world market, the big issue is affordability. Even if food, oil and coal are close to necessities, consumers can't pay more than they can afford

A person can tell from Figure 1 that since the first part of 2011, the prices of Brent oil, Australian coal, and food have been trending downward. This drop in prices continues into September. For example, as I write this, Brent oil price is \$97.70, while the average price for the latest month shown (August) is \$105.27. It is this steeper, recent drop, which many are concerned about.

Related: All Eyes On Kenya: The Next Big Oil Exporter

We are dealing with several confusing issues. Let me try to explain some of them



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AJ Ethanol	Å	1 565	+0 012	+0.77%	
🔛 Natural Gas	Å.	4 087	+0 059	÷1 44%	
(Gasoline	14	2 5 1 5 7	+0 0276	+1 71%	
Mealing Oil	A	2.7095	+0 0071	+0.26%	
TS CAIN	A	1218 /	13.0	40.2651	

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Issue #1: Over the short term, commodity prices don't reflect the cost of extraction; they reflect what

Oil prices are set on a worldwide basis. The cost of extraction varies around the world. So it is clear that oil prices will not match the cost of extraction, or the cost of extraction plus a reasonable profit, for any particular

If oil prices drop, there is a temptation to believe that this is because the cost of production has dropped Over a long enough period, a drop in the cost of production might be expected to lead to lower oil prices. But we know that many oil producers are finding current oil prices too low. For example, the Wall Street Journal recently reported, "Royal Dutch Shell CEO Can't deny returns are too tow." Ben van Beurden prepared to shrink company in order to boost returns, profitability." I wrote about this issue in my post, Beginning of the Entr? Oil Companies Out Back on Spending.

In the short term, low prices are likely to signal that less of the commodity can be sold on the world market Commodities such as oil and food are very desirable products. Why would less be needed? The issue, unfortunately, is affordability. Affordability depends largely on (1) wages and (2) debt. Wages tend to be fairly stable. The likely culprit, if affordability is leading to lower demand for desirable products like oil and food, is less growth in debt

Issue #2; Economic growth tends to produce a debt bubble.

Many economists believe that technological innovation is the key to economic growth. In my view, economies need a combination of the following to have economic growth of the type experienced in the last 100 years:1

(Increase in debt) + (cheap-to-extract fossil fuels) + (cheap-to-use non-fossil fuel resources) + (technological innovation)

In such a case, debt keeps increasing as an economy grows. Unfortunately, this economic growth is only temporary, because resources tend to become more expensive to use over time, making the "cheap" resources required for economic growth disappear.

The problem underlying the rising cost of resources (both for fossil fuels and others) is that we tend to use the cheapest-to-extract resources first. Technological innovation continues to occur, but as diminishing returns hit both fossil fuels and other resources, there are larger and larger demands on technology to keep costs in line with what workers can afford. Eventually, the cost of resources (net of technological improvements) rises too much, and economic growth is cut off. By this time, a huge mountain of debt has been built up

Let me explain further how this happens. Without fossil fuels, the world is pretty much stuck with the goods that can be made with wood, or from other basic resources such as animal skins, cotton, flax, or clay. A small quantity of metal and glass goods can be made, but deforestation quickly becomes a problem if an attempt is made to "scale up" the quantity of goods that require heat in their production.2

Once inexpensive coal became available, its availability opened the door to technological innovation, because it provided heat in quantity that had not been available previously. While ideas such as the seven endine had been around for a long time, the availability of inexpensive coal made the production of metals needed for the steam engine, plus train tracks and railroad cars, available at reasonable cost.

With the ability to make steel and concrete in quantity (both requiring heat) came the ability to make hydroelectric dams and electrical transmission lines, thus enabling electricity for public consumption. Oil, as a liquid fuel, paved the way for widespread use of additional innovations, such as private passenger automobiles, mechanized farm equipment, and airplanes. Between coal and cit, many workers could leave farming and begin jobs in other sectors of the economy

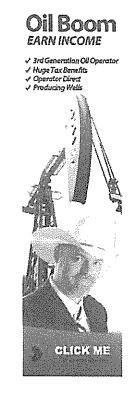
The transformation that took place was huge: from wooden tools and human or animal labor to a modem industrial society. How could such a big change take place? Before the change, the ability to generate a profit that might be used for future capital investment was very limited

Also, the would-be purchasers of products made in an industrial economy were very poor. I would argue that the only way of bridging this gap was debt. See my earlier posts, Why Matthus Got His Forecast Wrong and The United States: 65-Year Debt Bubble

The use of debt has several advantages:

- 1. It allows the consumer to buy the end product made with the new resources, assuming the end product isn't loo expensive relative to the consumer's earnings
- 2. It gives resource-extracting businesses the money they need to buy equipment and to hire workers, prior to the time they have earned profits from resource extraction

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- 3. It gives the companies the ability to build factories, before they have accumulated profits to pay for the factories.
- 4 It allows governments to fund needed infrastructure, such as roads and bridges, before having the tax revenue available to pay for such infrastructure
- 5 Most importantly, the "demand" generated by (1), (2), (3) and (4) raises the pince of resources sufficiently that it makes it profitable for companies in the business to extract those resources

Because of these issues, debt and cheap fossil fuels have a symbiotic relationship

- (1) The combination of debt, inexpensive fossil fuels, and inexpensive resources of other kinds allows the production of affordable goods that raise the standard of living of those using them. The result is what we think of as "economic growth"
- (2) The economic growth provides the additional income needed to pay back the dobt with interest. The way this happens is indirectly, through what is sometimes described as "greater productivity of workers." This greater productivity is really human productivity enhanced with devices made possible by fossil fuels, such as sewing machines, electric milking machines, and computers that allow workers to become more productive. Indirectly, the higher productivity of workers benefits both businesses and governments, through higher sales of goods to consumers and through higher taxes. In this way, businesses and governments can also repay debt with interest.

Higher-priced resources are a problem. Higher-priced resources of any kind tend to "gum up the works" of this payback cycle. Higher-priced oil in particular is a problem. In the United States, when oil prices rise above about \$40 or \$50 parrel, growth in wages stops.

Average US Wages Compared to Oil Price

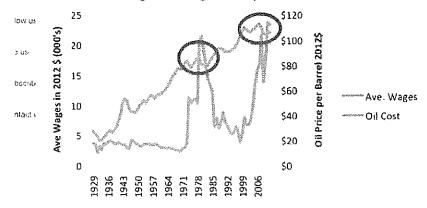


Figure 2 Average wages in 2012\$ compared to Brent oil price, also in 2012\$ Average wages are total wages based on BEA data adjusted by the CPI-Urban, divided total population. Thus, they reflect changes in the proportion of population employed as well as wage levels.

With higher oil prices, the rise in the standard of living stops for most workers, and good-paying jobs become difficult to find. There are a couple of reasons we would expect wages to stagnate with higher oil prices:

(1) Competition with cheaper energy sources. When oil prices rose, countries using a very high percentage of oil in their energy mix (such as the PIIGS in Europe, Japan, and United States) became less competitive in the world economy. They tended to fall behind China and India, countries that use much more coal (which is cheaper) in their energy mix.

Average Economic Growth 2005 - 2011 12% 10% 8% 6% 4% 2% 0%

US

Figure 3 Average percent growth in real GDP between 2005 and 2011, based on USDA GDP data in 2005

EU - PIIGS

india

China

(2) Need to keep the price of goods flat. Businesses need to keep the total price of their products close to "flat" despite rising oil prices, if they are to continue to sell as much of their product after the oil price increase as previously. Oil is one major cost of production; wages are another. An obvious way to offset rising oil prices is to reduce wages. This can be done in several ways: outsourcing work to a lower cost country, greater automation, or caps on wages. Any of these approaches will tend to produce the flattening in wages observed in Figure 2.

Based on Figure 2, an oil price above \$40 or \$50 per barrel seems to put a cap on wages, and indirectly leads to much less economic growth. Even if we didn't hit this oil price limit—for example, if we had discovered a liquid fuel that could be produced in quantity for less than \$40 barrel—we would eventually hit some kind of growth limit. For example, the limit might be climate change or too much population for food production capability. Even too much debt can be a limit, if citizens' incomes don't rise in a corresponding manner. At some point, it becomes impossible even to make interest payments if the debt level is too high. Indirectly, citizens wages even support business and government debt, because business revenues and tax revenues depend indirectly on wages.

Issue #3: Repaying debt is very difficult in a flat or declining economy.

Once growth stops (or slows down too much), the debt bubble tends to crash, because it is much more difficult to repay debt with interest in a shrinking economy than in a growing one

Repaying loans is easy in a growing economy

PIIGS

Japan

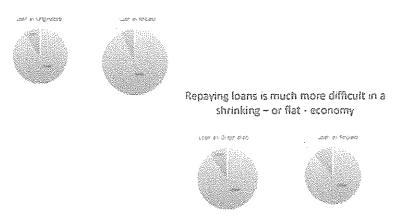


Figure 4 Repaying loans is easy in a growing economy, but much more difficult in a shrinking economy.

The government can hide this issue for a very long time by rolling over old debt with new debt and by reducing interest rates to practically zero. At some point, however, the system seems certain to fall

Not all debt is equivalent. Debt that simply blows bubbles in stock market prices has little impact on commodity prices. In order to keep commodity prices high enough for producers to want to continue to produce them, the debt really has to get back into the hands of the potential buyers of the commodities.

Also, any changes that tend to reduce world trade push the world economy toward contraction, and make it harder to repay debt with interest. Thus, sanctions against Russia, and Russia's sanctions against the US and Europe, tend to push the world toward debt collapse more quickly.

Issue #4: Rising oil and other commodity prices are a problem, especially for countries that are importers of those commodities.

Most of us are already aware of this issue. If oil prices rise, or if food prices rise, our salaries do not rise by a corresponding amount. We end up cutting back on discretionary purchases. This cutback in discretionary purchases leads to layoffs in these sectors. We end up with the scenario we had in the 2007-2009 recession; falling home prices (since higher-priced homes are discretionary purchases), failing banks, and many without jobs. See my article Oil Supply Limits and the Continuing Financial Crisis.

The reason that low oil and other commodity prices are welcomed by many people now is because the opposite-high oil and other commodity prices-are so terrible

Issue #5: Falling oil and other commodity prices are a problem, if the cost of production is not dropping correspondingly.

If commodity prices drop for any reason—even if it is because a debt bubble is popping—it is going to affect how much companies are willing to produce. There is going to be a tendency to cut back in new production if prices drop too far, it is even possible that some companies will leave the market altogether.

Even if it doesn't look like a country "needs" the current high oil price, there may still be a problem. Oil exporters depend on the high taxes that they are able to obtain when oil prices are high. If they cannot collect these taxes, they may need to cut back on programs such as food subsidies and new desatination plants. Without these programs, civil disorder may lead to cutbacks in oil production.

Issue #6: The growth in oil sales to China and to other emerging markets has been fueled by debt growth. This debt growth now seems to be stalling.

Growth in oil consumption has mostly been outside of the United States, the European Union, and Japan, in the recent past. China and other emerging market countries kept demand for oil high

Figure 5 Oil consumption by part of the world updated through 2013, based on BP Statistical Review of World Energy 2014 data

Ambrose Evans-Pritchard reports, China's territymn debt ratios poised to preaze past US tevels. He shows the following chart of China's growth in debt from all sources, including shadow banking:

Figure 1: Total credit communes to grow

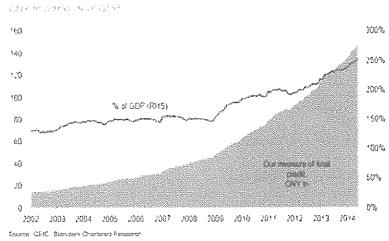


Figure 6. China's total debt, based on chart displayed in Ambrose Evans-Pritchard article

This rise in debt now seems to be slowing, based on a <u>Wall Street Journal</u> report. A person wonders whether this stalling debt growth is affecting world oil and other commodity prices

Leaky Pipeline

Despite efforts by China's central bank to prime the pump, lending plunged from year-earlier levels this summer.

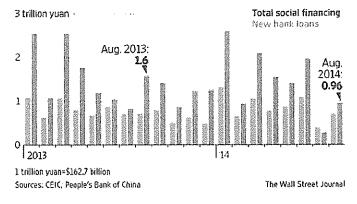


Figure 7 Figure from WSJ article PBOC Struggles as Chinese Borrowers Hold Back

Other emerging markets also seem to be experiencing cutbacks. Since 2008, the United States, Europe, and Japan have had very easy money policies. Some of the money available at low interest rates was invested in emerging markets. Now the WSJ reports, <u>Fod Duns Emerging Markets. Allure.</u> According to the article investors, investors are taking a more cautious stance on new investment because of fear of rising US interest rates.

Of course, other issues affect debt and world commodity demand as well. If interest rates rise, they many have a tendency to shrink new lending, in general, because loans become less affordable. Sanctions of one country against another, such as the US against Russia, and vice versa, also tend to reduce demand.

Issue #7: Debt bubbles have been a problem in past collapses.

According to Jesse Colombo, the Depression was to a significant result the result of debt bubbles that built up <u>attend the result of seems to be the loss of farm jobs that occurred when coal allowed tasks that were previously done by farm workers to be done by either electricity or by horses pulling metal plows. The combination of a debt bubble and loss of jobs seems to have parallels to our current situation.</u>

Many believe the subprime housing bubble crash contributed to the Great Recession. The outgoing spike of 2007, and 2008 played a major role as well.

Thousand Mtoe per Year

2

Issue #8: If we are facing the collapse of a debt bubble, it is quite possible that prices of many commodities will fall. This could possibly lead to a collapse in the supply of many types of energy products, more or less simultaneously.

Figure 8, shown below, is a very rough estimate of the kind of decline in energy use we could be facing if a debt collapse leads to very low prices of many types of fuels simultaneously. Prices of many commodities crashed in 2008, and it was only with massive intervention that prices were propped up to 2011 levels. After the beginning of 2011, prices began sinking again, as shown in Figure 1.

Tverberg Estimate of Future Energy Production

14 12 10 8 Renewables Nuclear Gas

® Oil

Coal

Figure 8 Estimate of future energy production by author. Historical data based on BP adjusted to IEA groupings.

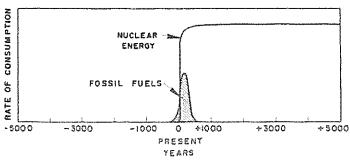
930

1995 2000 2005 2010 2015 2020 2025 2030

Clearly governments will try to prevent another sharp crash in commodity prices. The question is whether they will be successful in propping up commodity prices, and for how long they will be successful. In a finite world, fossil fuel energy production eventually must decline, but we don't know over precisely what timeframe.

Issue #9: My steep decline contrasts with the "best case" forecast of future oil consumption given by M. King Hubbert.

M. King Hubbert wrote about a scenario where another type of fuel completely takes over, before oil and other fossil fuels are phased out. He even discusses the possibility of making liquid fuels using very cheap nuclear energy. The way he represents the situation is the following:



jure 30 - Relative magnitudes of possible fossil-fuel and nuclearergy consumption seen in time perspective of minus to plus 5000 years

Figure 9 Figure from Hubbert's 1956 paper, Nuclear Energy and the Fossil Fuels

In such a scenario, it is possible that oil supply will begin to decline when approximately 50% of resources are exhausted, and the down slope of the curve will follow a symmetric "Hubbert curve." This situation seems to represent a best possible case, it doesn't seem to represent the case we are facing today. If a debt collapse occurs, much of the remaining fuel is likely to stay in the ground.

Related: Low Demand, Increased Supply Conspire To Push Crude Prices Lower

Issue #10: Our economy is a networked system. Increasing debt is what keeps the economy inflated. If wages fail to keep pace with debt growth, the system seems likely to eventually crash.

In <u>presidus</u> posts, I have represented the economy as a self-organized networked system, consisting of businesses, consumers, governments (with laws, regulations, and taxes), financial system, and international trade

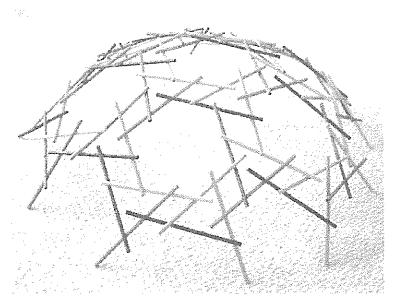


Figure 10 Dome constructed using Legnardo Efficies

One reason the economy is represented as hollow is because the economy loses its capability to make goods that are no longer needed—such as buggy whips and rotary dial phones. Another reason why it might be represented as hollow is because debt is used to "puff it up" to its current size. Once the amount of debt starts shrinking, it makes it very difficult for the economy to meintain its stability.

Many "peak oilers" believe that if we have a problem with the financial system, all we have to do is start over with a new one-perhaps without debt. Everything I can see says that debt is an essential part of the current system. We could not extract fossil fuels in any significant quantity, without an ever-rising quantity of debt. The problem we are encountering now is that once resource costs get too high, the debt-based system no longer works. A now debt-based financial system likely won't work any botter than the old one.

If we try to build a new system without fossil fuels, we will be really starting over, because even today's "renewables" are part of the fossil fuel system.3 We will have to go back to things that can be made directly from wood and other natural products without large amounts of heat, to have truly renewable resources

Notes:

[1] This is really a simplification of the real issues. As world population grows, it is necessary to obtain an increasing amount of food from the same arable land. Thus, it is necessary to find new processes to increase food production, at the same time that soil is quite possibly degrading. Soil is in a sense a "resource other than fossil fuels," but I have not mentioned this issue specifically.

Growing pollution problems are in some sense an indirect cost of extracting fossil fuels and other resources. These represent another growing cost that I have not specifically identified. Furthermore, there are indirect expenses that do not fit neatly into any category, such as required desalination plants to handle growing populations in areas where water is scarce. We may need to consider mitigation expenses of all types as part of the "cost of resource extraction."

My point is that it becomes increasingly difficult to offset these many cost increases with technological innovations. Furthermore, if no changes are made, a larger and larger share of both the workforce and resources are required for maintaining the status quo, leaving fewer workers and a smaller quantity of resources to "grow" the economy

[2] Wind and water are additional sources of energy, but they are sources of <u>mechanical energy</u>, not heat energy, so are not helpful unless they can be converted first to electricity, and then to heat. In quantity, they never were very large in pre-fossil fuel days.

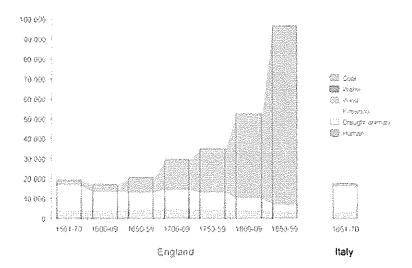


Figure 11 Annual energy consumption per head (megajoules) in England and Wales 1561-70 to 1850-9 and in Italy 1861-70 Figure by Tony Wrigley from Opening Pandora's Box. Figure originally from <u>Energy and the English Industrial Revolution</u>, also by Tony Wrigley.

[3] Of course, any existing "renewable" will continue to work until it needs repairs that are unavailable. Other parts of the system (such as electric transmission lines, batteries, inverters, and attached devices such as pumps) may fall more quickly than the renewables themselves.

By Gall Tverberg

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